


April, 1960

HARVARD MEDICAL *ALUMNI BULLETIN*



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References: (1) Samuels, S. S., and Shaftel, H. E.: J.A.M.A. 171:142-144 (Sept. 12) 1959. (2) Kaindl, F.; Samuels, S. S.; Selman, D., and Shaftel, H.: Angiology 10:185-192 (August) 1959. (3) Kraucher, G.: Prakt. Arzt 11:325-329, 1957. (4) Birkmayer, W., and Mentasti, M.: Wien. med. Wchnschr. 108:395-396 (May 3) 1958. (5) Clarkson, I., and LePere, D.: Detailed report in Mead Johnson research files. (6) Billiotet, J., and Ferrand, J.: Sem. méd. 34:635-637 (May) 1958. (7) Singer, R.: Wien. med. Wchnschr. 107:734-736 (Sept.) 1957.

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LETTERS

Bawdy Bulletin?

To the Editor of the *Bulletin*:

My dominant reaction to your latest issue (I almost said last issue, which would have been improper grammar and a Freudian slip) was "shock" . . . While medical humor is often amusing, it is sometimes raw and a bit embarrassing. I'm thinking primarily of your "Second Year Show," but "Homunculi" and the cartoon of the woman pawing for lumps added to the general tone . . . Don't get me wrong, now, this is a matter too subjective to be classed as criticism. Call it curiosity, for I'm eager to hear what reaction your last issue (latest, I mean) brings.

RONALD WOLK, Editor
The Johns Hopkins Magazine

To the Editor of the *Bulletin*:

"Homunculi" is richly diverting and amusing, and its authors are to be congratulated in blending their talents to create a contribution of such finesse. . . .

The February issue is exceptionally fine . . . The illustrative material brought every one of the features to life, which is the sincerest tribute to give them.

WALTER C. ALLEN, '15, Editor
*New York State
General Practice News*

To the Editor of the *Bulletin*:

Parts of the last *Alumni Bulletin*, particularly the feature on the Second Year Show, seemed to me a display of poor taste. The shows themselves have become rather tiring and vulgar, and I found this feature in the *Bulletin* neither edifying nor enjoyable.

ANONYMOUS
Peter Bent Brigham Hospital

To the Editor of the *Bulletin*:

. . . I think the present issue is one of the best and I want to express my thanks for it in my appreciation of your work. Several of us from the old school who are here at the Pratt look forward to the arrival of this in the mail more than most of our other literature.

ALLAN D. CALLOW, '42
Department of Surgery
Pratt Diagnostic Clinic
New England Center Hospital

A Pain in the Neck

He was a magnificent frog in long white coat and wore, to Alice's amazement, a Thomas collar.

She curtsied, cleared her throat and began, "Your Frogness."

"Why clear your throat, I shouldn't bother. But I like what you say."

"But I haven't said anything," Alice replied.

"Indeed you have," rumbled the Frog. "When you consider that one of my eggs," he blushed, "or I should say one of my wives' eggs can be divided and each half become a frog or, conversely with some hocus pocus, two eggs will become one frog you will see what I mean."

"But I don't see at all," said she.

"You would if you were uncertain whether you were two frogs or one. So when you said 'Your Frogness' you gave me the security I need. Thank you child."

Alice curtsied again and hurried on thinking "Will I ever be compleat?"

HENRY W. HUDSON, JR., '25

See Cobb, Stanley, "A Pain in the Neck," *Harvard Medical Alumni Bulletin*, February, 1960.

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CLASS DAY

Saturday, May 28, 1960

Longwood Quadrangle

10:30 a.m. - 12:00 noon Exercises for the Class of 1960

Class Historian

David P. Segel, '60

Faculty Speaker

George W. Thorn, M.D.

Awarding of Alumni Prize

Rolf Lium, '33,

President, Harvard Medical Alumni Association

12:00 noon

Class Day Luncheon

(All Alumni are guests of the School)

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HARVARD MEDICAL ALUMNI BULLETIN

VOL. 34

APRIL 1960

NO. 3

The Cover shows Dr. George P. Berry, the versatile Dean, on the back steps of Building A. More snow on pages 8 and 9. The Photograph is by Herman Goslyn.

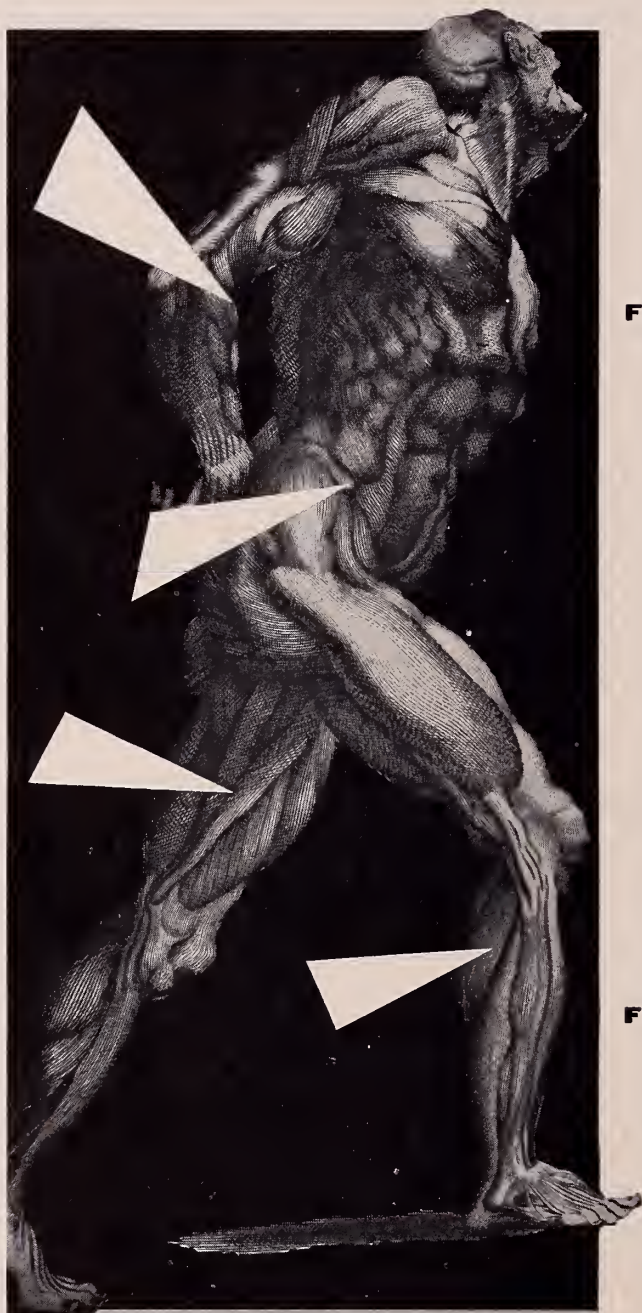
Letters	2
Along the Perimeter	5
Editorial: DeSenectute	10
Pharmacology	12
Truth and Death in Opera	17
Leonardo and Vesalius; The Two Roads: Surgery and Science	18
The Dying Patient and His Doctor	23
The Romanian Medical Scene	26
The Poet: A Physician to All Men	30
Long Island Hospital	36
Book Reviews	39
Diagnosis Deferred: Veterinarianism at Harvard	40
Looking Ahead to the New Countway Library	42
Alumni Council Candidates	46
Internships	48
Alumni Notes	57
Tom Douglas Spies	60

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Beecher, H. K. (Harvard University Medical School): *Brit. J. Anesth.* 29:261, June, 1957

Along the Perimeter

Dunham Lectures

Not within easy memory has the response to Harvard's Dunham Lecture Series been as warm as it was a month ago. On three afternoons in blustery March, two amphitheater-full crowds of transplanters in all forms of development came to hear what can almost literally be called the Gospel of transplant immunology.

With well chosen words, with lightness at the proper moments and above all, with clarity, Professor Peter B. Medawar of University College of London's Department of Zoology spoke on a subject on which he is the unquestioned ranking authority, "The Immunology of Transplantation." One had the feeling that here was an individual whose mind had, through the years, completely encompassed a subject of great complexity and had brought to it the straightforward, clear-thinking approach of a fine teacher and excellent researcher.

For those who heard him live in Amphitheater D, and for those who heard him transplanted by microphone in Amphitheater C, these lectures were a privilege such as we have not had in years.



April, 1960

The Pursuit of Primates

Letters and phone calls from as far away as the West Coast, and even contributions of some twenty monkeys have found their way to Building E-1, all earmarked for Dr. George E. Erikson, Assistant Professor of Anatomy. This flurry of response, and the promise of more, was prompted by the Medical School's announcement of a new course, the Comparative Anatomy of Primates, under Dr. Erikson's direction. This advanced course is completely new to Harvard. In fact Dr. Erikson says, "This is the first time I have given such a course, and I know of none like it elsewhere in the Universe."

The new course is not geared for future M.D.'s but for Ph.D. aspirants in anthropology, biology and paleontology, and for occasional well qualified undergraduates. Now launched and well under way, the new course has an enrollment of five graduate students, all from the Department of Anthropology, one instructor and one post-doctoral fellow, and a number of interested faculty members and medical students who attend spasmodically when crowded schedules permit.

Dr. Erikson bases the course in primate biology mainly on dissection, "to give anthropology students a chance to learn the soft-part anatomy they need for their osteological studies." He hopes to demonstrate that anatomy is a fascinating field and perhaps entice prospective teachers and investigators into this field to augment a dwindling supply.

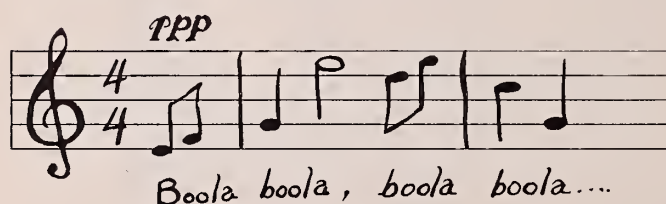
A major portion of Dr. Erikson's time during the last dozen years has been spent in the study of primates, here and on three expeditions to Central and South America. He now has a personal collection of well over one thousand primate specimens. With this rare collection, which ranges from tree shrews and lemurs through the tarsier, monkeys, anthropoid apes and man, Dr. Erikson can illustrate the evolutionary development of any organ system in the primates. Students have the unique opportunity to use these cadavers and skeletons in their dissections. "In teaching this course," Dr. Erikson says, "I appreciate having the opportunity to share some of the materials and information I've been gathering for years, but have had little chance to use in my usual medical school teaching."

← *Capuchin monkey from Dr. Erikson's collection.*

Ars Medica

If the busy schedule being planned for Alumni Day permits, art enthusiasts who are sound of wind and limb may wish to climb to the rarefied heights of the Warren Museum, there to feast on *Ars Medica*, which, according to literature supplied by its sponsor (Smith Kline & French), is a "collection of 134 prints by artists such as Titian, Rembrandt and Toulouse-Lautrec" which "portrays the evolution of man's concept of the art of medicine." The exhibit opens May 9 and runs through June 17.

A note from one of our correspondents in the provinces:



There must be many great men at a school called Yale,
But there's one thing that I've never seen fail;
They all speak in a voice quite low,
So whether or not they're bright I really don't know —
I've never had a seat in the very front row.

Alexander Burgess, '10, second from left, is the originator of the Unitarian Service Committee's project for staff exchange between Miriam Hospital, Providence, Rhode Island, and Poriah Hospital, Tiberias, Israel. Three leading members of the attending staff at Miriam have returned from four weeks in Israel. They are, left to right, Irving Beck, '36, Americo Savastano, '36, and Seebert Goldowsky, '32.



An Old Chestnut

"Carry a horse chestnut in your pocket and you will not be troubled by rheumatism," an old New England saying advises. We sophisticated modern medics think, "How quaint." Yet these nubbly brown nuts appear on desks here and there about the Harvard Medical School. Even by the window behind the Dean's desk one of these amulets dangles in a prominent position. The fact is that Dr. Berry acts as distributor of these symbolic lucky pieces.

The choice of the horse chestnut as the leitmotiv for the Medical School stems from a meeting of the Faculty of Medicine in 1869, the first at which the new President of Harvard, Charles W. Eliot, presided. Up until this time the Medical School, following the prevailing system of apprenticeship training, was virtually an autonomous institution with little more than a nominal connection with Harvard College. Dr. Eliot saw the need to convert the Medical School from a proprietary to a University school, and introduced this proposal at the 1869 meeting of the Harvard Medical Faculty. During the stormy debate that ensued, the medical dean, Dr. Henry J. Bigelow, an outstanding surgeon and an advocate of practical training, became incensed. When at length, President Eliot declared further argument to be useless, as the Corporation of the University had made up their mind to carry out the proposed scheme, Dr. Bigelow exclaimed:

"The Corporation? Does the Corporation hold opinions on medical education? Who are the Corporation? Does Mr. Lowell know anything about medical education? Or Reverend Putnam? Or Mr. Bowditch? Why, Mr. Crowninshield carries a horse-chestnut in his pocket to keep off rheumatism! Is the new medical education to be best directed by a man who carries horse chestnuts in his pocket to cure rheumatism?"

Chestnut or no chestnut, the Medical School rapidly became an intimate part of the University and the improvement in the system of medical education was soon apparent. Within two years, new laboratories had been fitted out for physiology and microscopic anatomy and had been added to those for anatomy and chemistry, and medical education based upon laboratory instruction in the basic sciences was on its way in America.

When Mr. Crowninshield was asked if he did indeed carry a horse chestnut in his pocket to keep off rheumatism, he replied that he did. And did it work? Mr. Crowninshield thought it did, for he had had no attacks since he carried it. He then amplified by expressing his amazement at the *retroactive* influence of the horse chestnut — the fact was, he said, he had had no attacks of rheumatism *before* he started carrying the horse chestnut!



Inside H.M.S.

Call me Jones—or any other name except DuPont. I'm completely fictional. It's especially important that all people in any authority at this school realize that—you'll see why as the story moves on.

Several days ago—never mind how many—being lost somewhere between the helminths and glomerulonephritis, I was given a little list of patients at one of our fine local hospitals. My fictional partner, let's call him Tom, and I were to find these patients and feel their livers.

Neither of us had ever felt a liver so this was kind of an exciting moment. Tom is very tall and I am very short—that's important so you can visualize what follows better.

There were six names on our list. It had been given to us the week before but we'd been pretty busy and couldn't make it up to the wards right away. When we finally got over to the hospital for our visit, before going up on the ward, we dressed up in the basement of the hospital: white coats casually with just the hint of our stethoscopes leaning out over the side of the right pockets.

It turned out that the first two names on our list had left the hospital several days ago. We both sighed and went to look for Mr. Warthin, No. 3 on the list. First room on the left. We straightened our coats again and gently rearranged the revealed portion of the stethoscope—pulled it out a little farther in case anyone might not have noticed it. Then we marched courageously into Mr. Warthin's room.

There he was standing up beside the bed smiling at us, all dressed in street clothes and obviously feeling much healthier than either of us. We excused ourselves fast saying we were sorry but that we had the wrong room. Thank you very much, goodbye.

Back out in the hall Tom looked one way and I looked the other so as to avoid each other's glance while we sort of regrouped ourselves. Neither of us said anything, we just walked back to the main desk and looked up the location of Mr. Balaro, No. 4.

Now Mr. Balaro was most special in that he was on what is called A-1 precautions—that means it's almost like preparing for Dog Surgery (that's another one of our courses) to go in to see him: surgical gown, mask, cap, and gloves.

All the time we're dressing down for the entry, Mr. Balaro is in there moaning really loud—"He's very sick, Tom, maybe we better not go in?" We did it though. Tom is pretty brave. While I held Mr. Balaro's hand back (he was not very conscious either) Tom felt where his liver was supposed to be. But as soon as Tom touched him, Mr. Balaro really started to moan and we figured his liver probably wasn't very important anyway and we left quick.

There wasn't much to say, so we disrobed and walked back to the main desk and looked up No. 5, Mr. Jawits. Second-year people have lots of guts.

So in we walked to the main ward where Mr. Jawits was and there he was standing over by the neighboring bed. He was tall and very happy looking. Tom said we'd like to examine you Mr. Jawits. He smiled back at us and said fine and returned to his bed and peeled off his shirt. All this time he's talking and carefully telling us his medical history and where we should listen for his heart murmur and where to feel for his liver and all. He said he'd been examined by lots of students here and was always glad to help. It seems he was a regular in here; he knew all the senior staff on down. So while he's talking, trying to put us at ease, Tom and me start to work. He feels for the liver while I listen for the murmur. We look up after a couple of minutes, nod, and change positions. Then we look up, nod again, and thank Mr. Jawits and walk out into the hall.

"Did you feel the liver, Tom?" "No." "Neither did I, how about the murmur, did you hear it?" "No." "Me neither."

So we walk up to the main desk sort of slowly now. It turns out that Mr. Mantella, No. 6, is down in the next ward. We walk on down there really slowly, not saying much. I look at Tom and he looks at me and we stop halfway down the corridor.

"It's almost supper time." "Yeah, I know." "I don't really want to . . ." "Let's eat."

Well, that's not the whole story but it's most of it. Now I guess you know why it's very important for the faculty and administration to know that I'm absolutely fictional.

ROBERT L. DUPONT, JR., '62

THE DAY



Some got there



Not until March 4 did the first heavy storm of the season hit Boston this year, and then it snowed for 37½ hours. It was a record fall of 20 inches. The prevailing jollity, of which the cover gives the best testimonial, shows that everyone was primed for confusion. The confusion was compounded on Friday morning when the Dean and Miss Susan Page manned the main telephone switchboard in Building A. The Medical School canceled classes for the first time within anyone's memory. And we promise not to bring any more snow pictures until next year.



Northern Comfort



Southern Cheer

THE DEAN DUG

Photographs by David Lawlor
and Herman Goslyn

The Dean's next project



Editorial

DE SENECTUTE

Senex ad Senem de Senectute Scribo:

Yet we are much older than Cicero ever was and also much more recent, so that we have a double chance of being wiser, having more experience of life, individual and collective. And the charm I find in old age, for I was never happier than I am now — comes from having learned to live in the moment, and thereby in eternity; and this means recovering a perpetual youth, since nothing can be fresher than each day as it dawns and changes. We have no expectations, the actual is a continual free gift, but much more placidly accepted than it could have been when we were children for then the stage was full of trap doors and unimaginable transformations that kept us always alarmed, eager and on the point of tears; whereas now we have wept our tears out, we know what can pop up out of those trap doors, and what kind of shows those transformations can present; and we can remember many of them with affection, and watch the new ones that still come with interest and good will, but without false claims for our own future.

George Santayana

It is difficult for the young to evaluate accurately the reactions of the aged to the forces acting upon their day-to-day lives. We well remember and understand the varying reactions we have had to our own environment but until we ourselves have experienced it, we shall never be fully appreciative of old age, its joys and its threats. Nor are these subjects such that the aged can easily share them with the young no matter how close is their relationship. By the time that we grow older and first gain a clearer insight into exactly what old age means, then *our* aged will have gone and *we* will be the aged; the cycle will have come full circle and again, there will be no sharing of old age with the generation that follows.

Santayana's words to his classmate on the eve of his 60th graduation anniversary help to give us a glimpse into that happier aspect of old age: the serenity that we have come to consider the natural prerogative of senescence but which is so often missing. He writes of "no expectations," of "no trap doors," and of "no unimaginable transformations that kept us always alarmed." He says that the aged "can observe the events of each day without false claims for our future."

For many of our aged, however, there *is* a trap door and there *can be* unheralded transformations in the form of illnesses that deprive them of their serenity. In Washington today, the debate continues on the Forand Bill. We all inherently believe in the principle of good medical care for all. We all know that the need is great, particularly for our growing population of aged. The difficulty lies in its implementation.

A program of insurance based on an increase in the Social Security benefits can be criticized for the unequal onus it places (without return) upon the employer; for its failure to provide a solution to the needs of those without Social Security, and for its tendency to smack of socialized medicine.

A program of insurance based upon a voluntary prepaid medical insurance plan can be criticized for the relatively heavy burden it forces upon the low-income worker in order to obtain proper medical care.

Two major thoughts seem worthy of repetition. First, neither plan alone can be expected to cover completely the expenses of medical care for our growing body of aged. There are now and probably always will be those who don't receive Social Security; or those who have ample funds of their own or those who are destitute. Some form of City, State or Federal tax supported "government" help will always be required. Some form of voluntary "private" insurance will also always exist.

Second, a modicum of Social Security coverage for medical care does not necessarily smack any more of "socialized medicine" than the rapidly increasing easy acceptance by medical institutions of Federal funds for new buildings, research and support for education. It is simply the interpretation that is placed upon the particular case.

Ideologically, our way of life demands that we have a form of health insurance which is voluntary, since in a democracy the decision should rest on the individual. There is no question but that more and more people will soon have ever broadening types of voluntary coverage to include continuing care for the home-confining illnesses of the aged. But no matter how broad this voluntary coverage is, there will always be the need for government help for those who cannot support themselves. Here is the crux of the argument — and in it there is a bit of the old struggle between state and federal government: Social Security extensions suggest Federalism but when the state or city or community assumes responsibility for medical care for the needy, then this taint of Federalism in medicine becomes softened and such a plan is more easily accepted within the democratic credo.

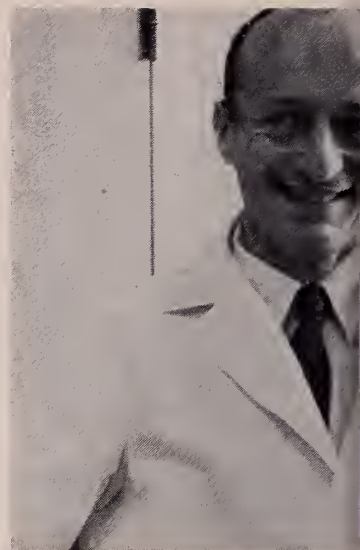
In this election year a solution of this problem seems unlikely. Its eventual and much needed solution will surely be a compromise between State and Federal systems. Let us hope it will not compromise the serenity of the aged.

J.R.B.

Dr. Stephen Kuffler, right, Professor of Neurophysiology and Neuropharmacology, recently joined the Department. Acquiring him and his group from Johns Hopkins represents one of the School's major coups of the year.

Dr. Otto Kraye, below, Head of the Department and Charles Wilder Professor of Pharmacology, studies plans for the revision of Building B-1.

The author, extreme right, puts a pigeon in a Skinner Box for study of behavior effects of drugs.



Photos by David Lawlor

Pharmacology

Peter B. Dews, M.B.

ASSOCIATE PROFESSOR OF PHARMACOLOGY

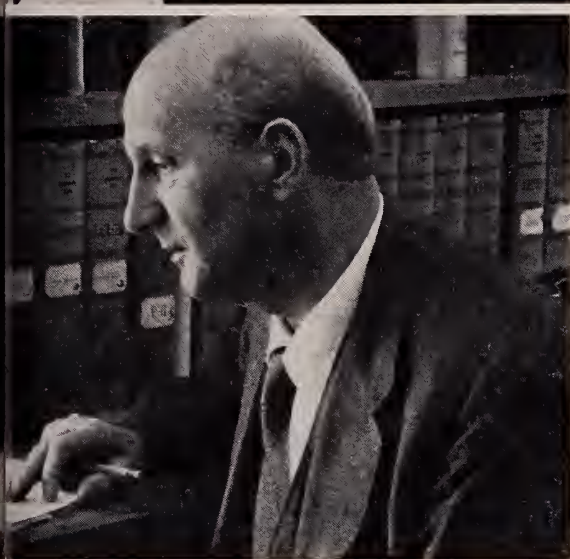
In the summer of 1959 the Department of Pharmacology moved from Building E-1 to Building B-2. As every student (or ex-student) knows, a change from E to B represents a major step towards Elysium; and so it was with pharmacology. High, dim rooms and corridors essentially unchanged since the days of the builders of 1906, were exchanged for bright, light, air-conditioned quarters; working floor space was approximately doubled; and the members of the department moved into laboratories that, to a very large extent, they themselves had designed. Pharmacology is now housed in a manner fitting its dignity as the most important of the medical sciences.

This is the second in a series of articles about the preclinical departments at Harvard Medical School.

For the most important it surely is, on both practical and theoretical grounds. It should be remembered that by far the most common and compelling reason for a patient to consult a doctor is to seek relief from illness — cure if possible — but relief, at least. The agents available to the doctor for providing relief are chiefly 1) talk, 2) surgery, and 3) drugs. Talking treatment has some obviously desirable features: It cannot, for example, cause agranulocytosis! Even so, most talking doctors today seem glad to reinforce their words with judicious use of an “energizer,” or “tranquilizers.” Similarly, the great majority of patients expect, and receive extensive pharmacological preparation, either local or general or both, before being subjected to sur-

gery. The third general method of treatment is manifestly applied pharmacology. Pharmacology thus plays a crucial part in making the physician able to, at least partially, fulfill his most sought-for role.

Pharmacology has an equally important position in basic medical science; in the suggested words of a brochure intended to attract students to a career in pharmacology, “. . . pharmacology offers unique opportunities . . . for the integration of physiological, chemical and physical knowledge.” The word “integration” is worthy of comment. This is a word of great prestige these days. Medical school administrators favor a type of curriculum called integrated, and everybody is in favor of it for the South.



But there is perhaps some slight tendency for contemporary biochemists and even physiologists to become so engaged in frenetic analysing that they have no time to think about how the parts go back together again and interact. It is almost impossible for pharmacologists to err in this respect because almost invariably when one influences an organism with a drug, it resists in one way or another, and the range of integrative systems available to the organism for resisting change are constantly and forcibly brought to their attention. Thus the wisdom of classical physiology is preserved in the thought and teaching of pharmacology.

This is not to say that pharmacologists cannot analyse with all the fervor of a 2-year-old with a Sunday

New York Times; they yield to none — physiologist, biochemist, even biophysicist, in this regard. To substantiate this point, let us mention some of the activities of the members of a generally excellent and well balanced department of pharmacology in a leading medical school; that of Harvard Medical School will serve as the example.

There are well over a dozen more-or-less independent lines of research in progress in this department at the present time, ranging from synthetic organic chemistry and nuclear magnetic resonance on the one hand, through studies on single cells and isolated organs and tissues to studies of behavioral responses of whole animals at the other extreme. All these people are doing pharmacology; though it

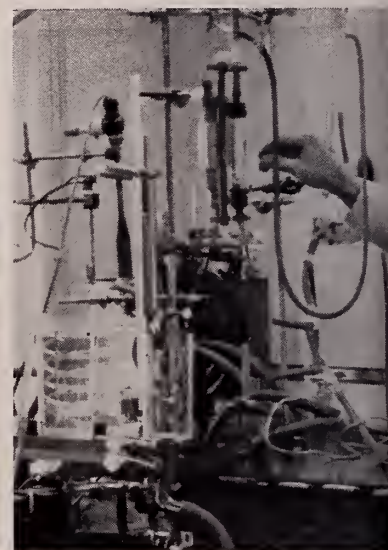
must be admitted that some of them are doing such fundamental pharmacology that they themselves have not yet realized that it is pharmacology. The few of these activities that will be briefly described have been chosen to illustrate not only the analytical zeal of modern pharmacologists but also the wide diversity of techniques employed.

LET us start the list with the people with the smallest subject matter, which happens to be subatomic, if not subjunctive. The main tool being used by this group is a nuclear magnetic resonator. "Nuclear" refers, of course, to the nuclei of atoms, not cells. The principle of the resonator, or the "nmr," as it is affectionately

called, is that most nuclei are dipoles (i.e., are little magnets with N and S poles), so that if put in a strong magnetic field, they "line up." If these oriented nuclei are then subjected to the magnetic influence of high-frequency alternating current they "beat" in unison. The biological usefulness of the tool arises from the fact that the ease with which the nuclei can be made to "beat" depends on the topographic relation of the nucleus to other nuclei in the vicinity. The spectra therefore tell something of the shapes of drug molecules (and thus

generation time of bacteria and to the ease of identification of genetic change through changes in the biochemical properties of the cells. Methods have very recently been developed for the culture of mammalian cells in chemically almost completely defined media. There is thus the promise of being able to study the genetics of mammalian cells under highly advantageous circumstances, hitherto enjoyed only by workers with unicellular organisms. One of the difficulties standing in the way of fulfillment of this promise is the difficulty, with

growing in a medium not containing a specific substance required by a particular mutant, is treated with penicillin, then the cells of that mutant will not be killed, because they are not growing, while most of the rest of the cells will be killed. The deficient mutant can thus be isolated. This method is not applicable to mammalian cells since penicillin does not have this selectivity towards mammalian cells. An ingenious attempt is being made to use radioactive substances to do the job for mammalian cells that penicillin does



Above, Drs. David Hubel and Torsten Wiesel study records of the activity of single neurones of the cerebral cortex. The apparatus for heart-lung experiments at right will be familiar to students who have been through the School in the last twenty years. Dr. Ulrich Trendelenburg makes an adjustment.

how they might fit into or onto cells), and of the mobility of molecules or ions. Knowledge of the shape of chloramphenicol molecule, for example, has given a clear lead as to its probable intimate mechanism of action on the cell; and problems of movements of water and electrolytes in biological systems are so ubiquitous that the importance of all possible information on them is obvious. This is a pioneer endeavor for a department of pharmacology.

One group in the department is interested in the genetics of mammalian cells. In the few years during which bacterial genetics have been studied, quite spectacular progress has been made, due, in large part, to the short

mammalian cells, of isolating mutant strains. In the great majority of instances, mutations result in the loss of some attribute of the cell, such as the ability to synthesize a purine or a pyrimidine or a particular amino acid. The genetic change can be recognized by showing that the cells can grow only when supplied with a specific substance not required by "wild" cells. But how can one isolate a few cells which are not growing from a vast population that are actively growing and dividing? It is like looking for a needle in a haystack that is expanding like a mushroom cloud. For bacteria, the answer is to make use of the selectivity of penicillin. Penicillin kills only growing cells; hence, if a culture,

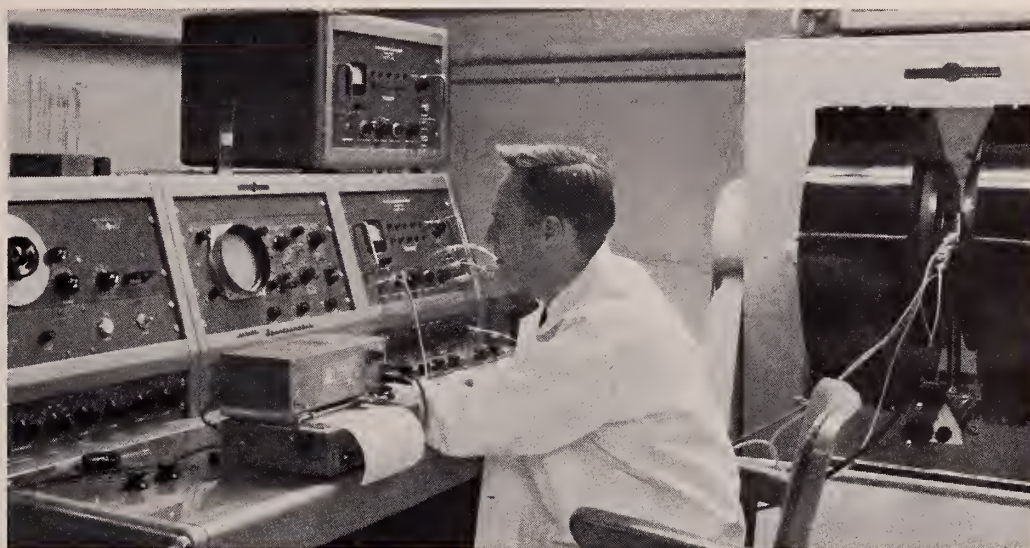
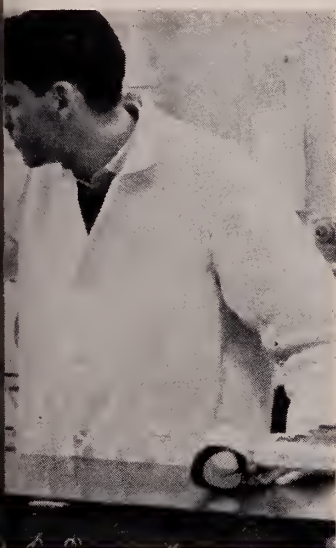
for bacteria. As with bacteria, if mammalian cells are grown on an ordinarily adequate medium, mutants that have lost the ability to synthesize an essential metabolite (e.g., an amino acid such as proline) will not grow. If to the medium tritiated thymidine is added, the growing cells will take up the thymidine (they can make it, but are happy to accept it "free" when it is given in the medium) while the non-growing mutant will not. The tritium (H^3) in the incorporated thymidine decays rapidly to non-radioactive elements; the radiation emitted in the process kills the cells. When the decay is completed, one is left with dead wild cells and a few quiescent, though live, progeny of

the mutant cell, from which the strain can then be grown. Such is the theory, and only technical difficulties — though some of them formidable — stand in the way of effectuation.

The other “subcellular” group is interested in how certain substances are situated in the cell. The substances include 5-hydroxytryptamine and epinephrine, and enzymes such as amine oxidase. The problem is to determine whether the substances are localized in particles (usually called granules) or not, and if so, which particles and how the particles are held

the tube and its contents are then repeatedly cleanly sliced with a horizontal guillotine device that permits the suspension above it to be pipetted off without disturbing the lower layers. It turns out that many autogenous substances of high pharmacological activity are localized in the cell in granules. In the adrenal medulla, for instance, epinephrine is in granules. These particular granules also contain large amounts of that omnipresent donor of energy, ATP, and the nature of the association naturally provokes interest. The particulate state of the

be inserted in different parts of the cell, so that changes in cell body, dendrites and axons can be separately analysed. Using a preparation obtained from lobsters or crayfish, it has been found possible to follow the changes in these various parts of a neurone resulting from arrival of either excitatory or inhibitory impulses from other neurones, and the modification of these changes by application of drugs. Interaction between neurones, probably usually involving liberation of chemical substances, and modification of these



Dr. Oleg Jardetsky at the controls of the nuclear magnetic resonator. The large magnets for the alignment of the atomic nuclei can be seen at right.

together. The method (developed elsewhere*) of separating the different particles liberated when cells are homogenized depends on the various types of granule having slightly different densities. A series of solutions of sucrose of progressively decreasing concentration are “layered” in a gelatine test tube by carefully putting the solutions one on top of another in the tube. The cell mash is then added and the tube spun at high speed in the centrifuge. The various granules “sink” until they reach the sucrose solution of specific gravity corresponding to their own. Starting at the top,

epinephrine is also relevant to inquirers after the manner in which the arrival of “electrical” excitation at nerve terminals leads to liberation of humoral agents.

Next, we come to the Department groups which are working on intact-though-single cells. The favorite cells for these types of studies are nerve cells and muscle cells, though a variety of nerve cells, of organisms from Arthropoda to primates, and of muscle cells both, plain and cardiac, are under study. The extreme sensitivity and speed of electronic methods of recording permit the changes occurring during excitation and inhibition in single nerve cells to be followed. Indeed, microelectrodes can

interactions by changes in the chemical milieu of the cells, are believed to constitute the physical processes involved in the integrative functions of the nervous system. An important part of this program is concerned with chemical identification of active substances — particularly small molecule substances obtained from brain.

Another member of the group is making comparable analyses of some properties of other neurones of crayfish. These merit the attention of a committee on unpharmacological activities, since it has been convincingly demonstrated that some of the synapses between these cells have the audacity to dispense with the use of a chemical mediator in their transmis-

*The people in Oxford would disagree; they feel that everywhere else than *there*, is elsewhere, rather than the converse.

sion of excitation. One must, I suppose, be tolerant of a few deviant individualists; happily, the morphological peculiarities of these synapses, which are apparently necessary for electrical transmission to take place, are possessed by extremely few properly studied synapses, so that there is hope that the great majority will be able to enroll as loyal members of the pharmacological union, so soundly founded by the peripheral synapses of the autonomic nervous system.

It is (almost) the easiest thing in the world to stick electrodes into the brains of animals and to provoke and record electrical changes using expensive but readily available electronic equipment. It is (almost) the hardest thing in the world to provoke changes in the brain by physiological stimuli and then to not merely record electrical changes, but to know where and what the changes are. At the present time, there is hope of knowing "what" only if sufficiently small electrodes are used so that activities from only one, or at most a very few, cells or fibers are recorded. The "where" can subsequently be determined by histological tracing of the path of the electrode.

The central nervous system of mammals is receiving attention. By using precisely defined visual stimuli two members of the group are studying the patterns of activities engendered in the visual pathways of cats and monkeys. The functional relationships between the nature of the stimuli and the patterns of response of even small units are already extremely complex in the retina; much more so in the lateral geniculate; and in the visual cortex, much more complex than in geniculate. In the cortex, the pattern of discharge depends not only on which eye is stimulated, and how intense the stimulation, but also on the shape of the stimulus light, whether it is moved or not, and if so how fast, and in what direction and, in the monkey, the color of the stimulus light. Stimulation may cause cells to discharge or if they are already discharging, may cause them to cease. The two eyes interact with one an-

other. In spite of all these complexities, painstaking systematic analysis is showing that there is law and order in these phenomena. There is no obvious limit to the potential contribution of this line of work to our understanding of the workings of the central nervous system.

Let us now turn to studies on organs. This is the level of analysis of "classical" pharmacology. "Classical" methods continue to be as important as ever in finding out what drugs do; indeed, it may be said they are more informative than ever — their effectiveness has been potentiated rather than antagonized by introduction of new techniques. For example, electrophysiological techniques have provided information on some of the intimacies of transmission in the superior cervical ganglion. Use of the knowledge gained by these (relatively) new techniques permits much deeper interpretations of studies on modification by drugs of the response of the nictitating membrane to preganglionic stimulation. Use is being made of this classical method — unrivalled, when competently applied, in this area in its productivity of clear, reliable quantitative information — to good effect in studying the nature of supersensitivity, and also in studying the effects on these nerve cells of putative "neurohormones." These latter studies have obvious importance far beyond the autonomic nervous system. There is every reason to believe that all the preganglionic neurones whose axones end in synapses in the superior cervical (and, of course, other) autonomic ganglia are cholinergic, and that only excitatory synapses exist; yet a number of substances such as epinephrine, histamine, and 5-hydroxytryptamine have quite specific effects on transmission. Some biochemists and others have been led to infer (out loud and in print) that some of these substances are transmitters in the central nervous system, on evidence that is essentially no more than that changes in concentration of the substances are correlated with changes in central nervous system function. Honest classical

pharmacology contributes by exposing the inadequacy of this evidence and enables the initiated to avoid wasting their time on fruitless speculations.

The cardiovascular system continues to be a major field of interest in the department, absorbing some considerable part of the energies of a number of people. The debt which pharmacology as a whole owes to the veratrum alkaloids progressively increases as studies on the latter enrich the former. Chemistry is also obligated to the veratrum alkaloids since they have formed the starting point from which our partly domesticated chemist has taken many flights on the wings of elegant reactions into the higher realms of pure synthesis, to the enrichment of organic chemistry. Members of the group discovered a few years ago that reserpine leads to disappearance of adrenaline-like substances from heart. They are now studying the functional consequences of this loss.

The obvious suzerainty of pharmacology over the territory of endocrinology has been challenged from time to time by anatomy, physiology and biochemistry, so it is a pleasure to be able to report that the Department has loyal members who are undisputed tenants-in-chief of fiefs in endocrinology. This noble band is laying siege to a bastion of endocrine ignorance: the parathyroid — one of the last glands with a hormone secretion of virtually unknown chemical structure. One of the main handicaps to progress has been the inadequacy of assay procedures for the hormone activity. The fractionations and concentrations involved in purification of a hormone, a necessary prelude to its chemical identification, depend for their effective prosecution on accurate information as to how the biological activity is modified by the various procedures and how it distributes itself among the consecutive fractions obtained, for example, in the course of an elution. The biological activity can only be measured by biological assay. The group have vastly improved the meth-

(continued on page 45)

Truth and Death in Opera

"I have never encountered anything more false and foolish than the effort to get truth into opera. In opera everything is based upon the not-true."

(Tschaikovsky: Diary)

On the night of March 4, 1960, the mock-tragedy of an opera performance at the Metropolitan Opera House in New York was interrupted by a real and human tragedy which rang down the curtain on that performance and on the career of a great performer. Having completed an aria and stretched out his arms to receive the accustomed thunderous applause, Leonard Warren quite suddenly collapsed. A few minutes afterwards it was announced before the curtain that Warren was dead and that the performance would not go on.

Warren's career on the Metropolitan stage had lasted twenty years; he was forty-eight years old and at the height of his powers. The music critic, Irving Kolodin, records his own feeling in the early days — that a voice used with such unrestricted power would soon be worn out. On the contrary, Warren proved tireless and absolutely reliable. He had an unmistakable timbre which makes his voice instantly recognizable in any recording. He was a huge man of commanding presence, so that the villainy characteristic of baritones seemed fitly committed to him.

The opera in which Warren died, Verdi's *La Forza del Destino*, was adapted from a Spanish drama by Rivas. An outmoded blood-and-thunder nineteenth century drama, this story would be impossible to resuscitate in the twentieth century except in a musical version. In the fatal scene, Warren is onstage with the tenor, who lies on a litter with a chest wound, attended by a surgeon. The baritone had rescued him, and in a duet, they swear blood brotherhood. A locket on the wounded man, however, depicts the wronged woman whom the baritone has sworn to avenge. (Clearly, it is the tenor who has wronged her.) The blood brother suddenly becomes the enemy. Holding the locket, the baritone in an aria addresses it as the fatal vessel of his destiny, "Urna fatale del mio destino." At the end of this aria, the surgeon announces that the tenor will live (in the English translation that "the bullet has been retrieved"), whereupon the baritone exults that he will himself have the satisfaction of killing his rival. A moment before, he had sung of how terrible it is to die; and with this exultation, Warren collapsed and died, as the "surgeon" rushed to his side and the curtain was rung down.

In this scene, there is a characteristically untruthful opera situation: the man with the chest-wound singing a lusty duet. Of course, we may translate it as a breast or chest-wall wound, and the surgeon *does* say that it alarms him and counsels silence. The situation is nonetheless

typical. Operas bristle with seemingly trivial and contrived events; and yet, the events are important: the duet is a paean of blood-brotherhood; the aria is a gloomy soliloquy on the mystery of fate and death. Relatively meaningless events evoke meaningful and profound musical commentary. This, the non-lyric stage cannot do except through poetry, and hence the familiar improbabilities of Shakespeare.

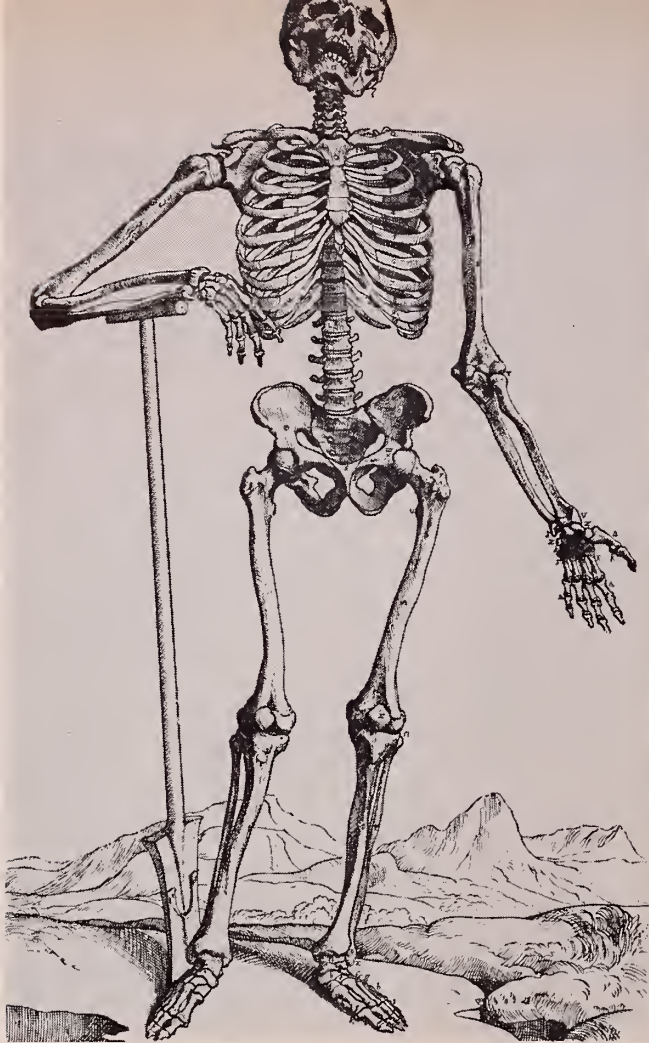
Opera requires not only what Coleridge called "That willing suspension of disbelief for the moment which constitutes poetic faith," but a certain amount of historic and literary information not readily acquired between the acts. As an opera buff myself, I can only wish that thosefortunates who are able to hear the opera this year will not only cast off the shroud of medical disbelief, when Violetta's golden voice pours from tubercular lungs, but will come away from their inevitably not-quite-perfect experience with a residue of enthusiasm for the medium in which Leonard Warren lived and died.

GEORGE S. RICHARDSON, '46

"He fell like a column . . . he was a column."

— quoted from a friend.

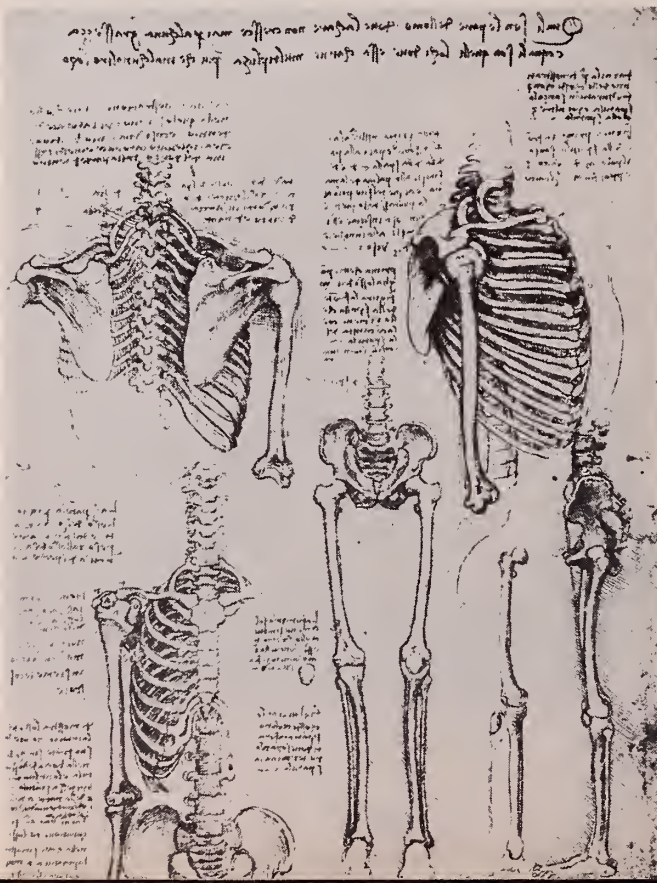




LEONARDO AND VESALIUS

The Two Roads : Surgery
and Science

The skeleton: Leonardo (below), Vesalius (above). Leonardo avoids the dramatic poses used by Kalcekar and Vesalius, and also by DaCarpi who may have set the style.



Francis D. Moore, '39

MOSELEY PROFESSOR OF SURGERY
HARVARD MEDICAL SCHOOL

SURGEON-IN-CHIEF, PETER BENT BRIGHAM HOSPITAL

Dr. Moore talks softly, and carries a big moral at the conclusion of this historical and artistic essay. We liked it, even without the moral. This shortened version is taken from the forthcoming book, *Disease and the Advancement of Basic Science*, edited by Dr. Henry K. Beecher, to be published this summer by the Harvard University Press.

ALTHOUGH we live in a period when it is appropriate to foster fundamental science and somewhat old-fashioned to defend applied science, I should like to emphasize that very important and elegant work of applied human biology, the study and practice of medicine. It is my contention that the general atmosphere surrounding the care of the sick has always been one of the chief factors in the advancement of biological science. This atmosphere is one of urgency, a stronger motivation than any other community drive except national defense, a promise of possible help in the relief of suffering. The careers of two men of the Renaissance test, if not prove, my contention that the care of the sick has provided a most fertile milieu for the advance of science. These two men are Leonardo da Vinci and Andreas Vesalius.

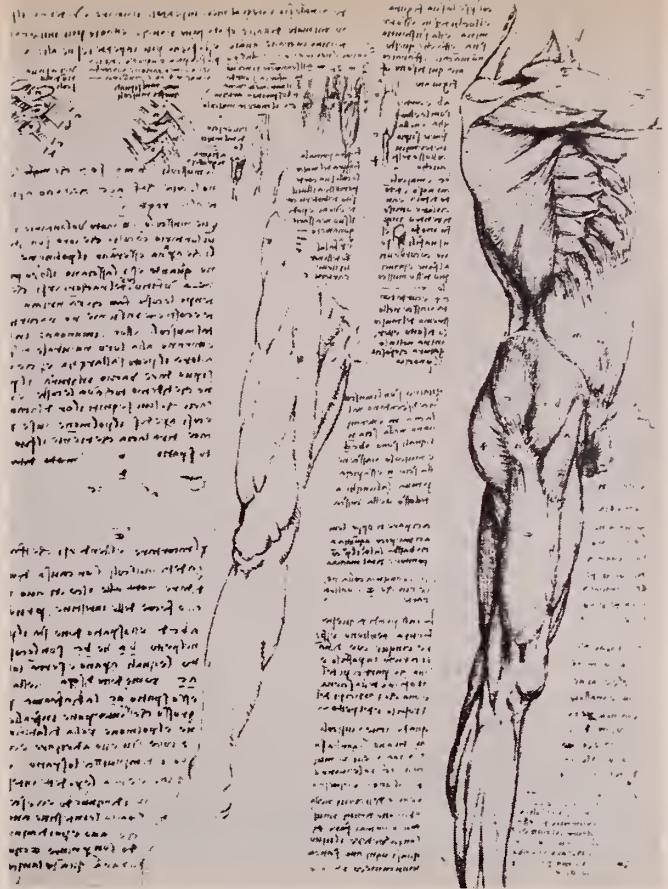
It has been said many times that Vesalius was the man who opened biological science as we know it now, by first looking at the human body just as an astronomer might look at a star or a botanist might inspect a tropical plant. He studied and drew human anatomy in a way that was entirely original and was most significant for the growth of biological science. Vesalius lived from 1514 to 1564 and he did his major work in Padua between 1535 and 1545.

It is therefore especially interesting to consider that the pictures by Leonardo shown on these pages were made fifty years before those of Vesalius. They are elegant anatomy, superb science, and surpassing art and yet they had no influence whatsoever on the growth of anatomy.

There is a striking contrast between the scientific impact of these two men, who worked in the same field within 100 miles and within fifty years of each other. Leonardo was born in 1452. He died in 1519, when Vesalius was five years old. Leonardo's early period of anatomical interest was between 1487 and 1490, during which time he became interested in anatomy and dissected a few arms and legs, and, due to local practice, heads; but he did not have much opportunity to carry out dissection of an entire cadaver until about 1510 in Florence.

In view of the remarkable importance of Vesalius, it is especially interesting now to look back at Leonardo and try to understand why he had no influence whatsoever on biological science or anatomy when much of his anatomical observation was just as accurate and penetrating as that of Vesalius and his scientific interest just as "pure."

It is a common misconception that Leonardo's anatomical study was undertaken so that he could become



The superficial muscles: Leonardo (above), Vesalius (below). Leonardo's figure has a sturdy stance and sense of weight-bearing. The Vesalius, again, is a dramatic pose against the famous landscape background that was later identified outside Padua.



a better artist. Leonardo's anatomical study was approached with exactly the same thoroughness and enthusiasm with which he approached the many other things in which he was interested, including engineering, aviation, military science, and architecture. He went into the matter of the structure of man with his full inquiring vigor and went far deeper into anatomy than was necessary merely to draw the surface. He also developed ideas for anatomical study, dissection, and teaching — ideas which were entirely original with him and were actually quite lost, even to Vesalius, and not rediscovered for several hundred years. These were most especially the technique of the sagittal section, the coronal section, the cross-sectional anatomy, and the concept of depicting an anatomical part as it looked from many aspects rather than just as seen from the front. If one looks through the newly republished collections of Leonardo's anatomical studies, one finds in them in essence all of the qualities which gave Vesalius such a key position about fifty years later. Yet, as nearly as we know, Leonardo had little influence on anatomical or biological science. His influence on art, architecture and engineering were extensive, so that we cannot assign to Leonardo any inability to communicate.

Both Leonardo and Vesalius were eminent men in their own times, very vocal, very egotistical; they taught widely, both of them loved to write and to draw pictures. We can accuse neither of them of having the slightest desire to hide his light under a bushel. But the fact of the matter is that Leonardo, who was isolated entirely from the environment of the care of the sick, had virtually no influence on the growth of biological science. He was not surrounded by others interested in becoming his pupils in anatomy or in seeking the application of anatomy to the care of the sick.

Vesalius, by contrast, worked with the sick and taught at a medical school. He was a professor of surgery and he was made professor at Padua at the age of 23. Vesalius' anatomical science was every bit as "pure" as the most abstract study of physics or chemistry might be today. There was no clinical application whatsoever for proper understanding of anatomical relations. Vesalius sought the truth as he could see it in terms of anatomy. But he was in a medical school, he was looking after the sick at the time, and he was surrounded by students. His influence was immediate, explosive, far-reaching, and indubitable. His chair at Padua saw successively Fabricius, Fallopius, and William Harvey. His work was plagiarized all over Europe, even before he died, and within one hundred years of his death academic dogmatism had run full circle, accusing him or copying him, usually a sign of success.

Jacob Bronowski, the author of *Science and Human Values*, points out that the two great periods of scientific birth, in Greece and in the Renaissance, were periods when science and art existed side by side, both of them in a very florid form, and that it was more than a coincidence

that within twelve years in England were published the Authorized Version of the Bible, the First Folio of Shakespeare, and the first table of logarithms. Bronowski is also interested in the sort of individual who becomes creative in science. He says "a man becomes creative, whether he is an artist or a scientist, when he finds new unity in the variety of nature. He does so by finding a likeness between things which were not thought alike before and this gives him a sense both of richness and of understanding."

There certainly have been very few physicians or surgeons who could answer this description, especially when we think that in Bronowski's lexicon there are only about thirty men since 1450 who would be considered as fulfilling this definition. Both Leonardo and Vesalius qualify.

We thus find that within fifty years there were two men working close together in the same country and with the same kind of material, opening up observational science and biology by depicting accurately the structures of the human body as based on actual dissection. One of them, whose work was in association with the care of the sick and with students of medicine, had a tremendous influence on the growth of science, and the other, who was isolated from this environment, did not. This duality epitomizes a main contribution of the care of the sick to the growth of biological science which has become the largest, most heavily populated and heavily communicated branch of all science and the one wherein advance can most readily find expression in terms of human welfare, undeniably an objective of even the most abstract scientist.

THE two roads, surgery and science, have surely not always been together but in 1543 they were in one man. Despite this glorious conjunction, however, the two roads of surgery and science wandered quite separately for about 300 years, as biological science developed successively the fields of chemistry, physiology, pathology, biochemistry, metabolism, and biophysics, and surgery floundered in a morass of empiricism. The two roads converged again in 1850, and formed a union to which all of the advance in surgery in the last fifty years may be traced. The problem today is that of maintaining this unity and this growth. It is my conviction that this can best be accomplished by fostering the support of individuals who combine both talents in one career.

There are several serious problems which, if unsolved, are going to arrest the spectacular development of American surgery. These problems have to do with the career arrangements of those men who are talented in both fields. The practice of medicine or surgery is a time-consuming profession. The young surgeon who is forced to support himself cannot hope to find the time necessary to remain productive in clinical investigation. As he grows older he has an increasing tendency to retire from the attempt and to employ other individuals, now referred to as "basic

scientists." Maybe this works somewhere, somehow, but I think in general it is an unfortunate trend. If this practice becomes widespread, the present healthy growth of surgical science is going to slow down and stop. That growth has been due to the willingness of single individuals to take the gamble and the sacrifice of a double career in science and surgery. But we should not require of these men too expensive a sacrifice.

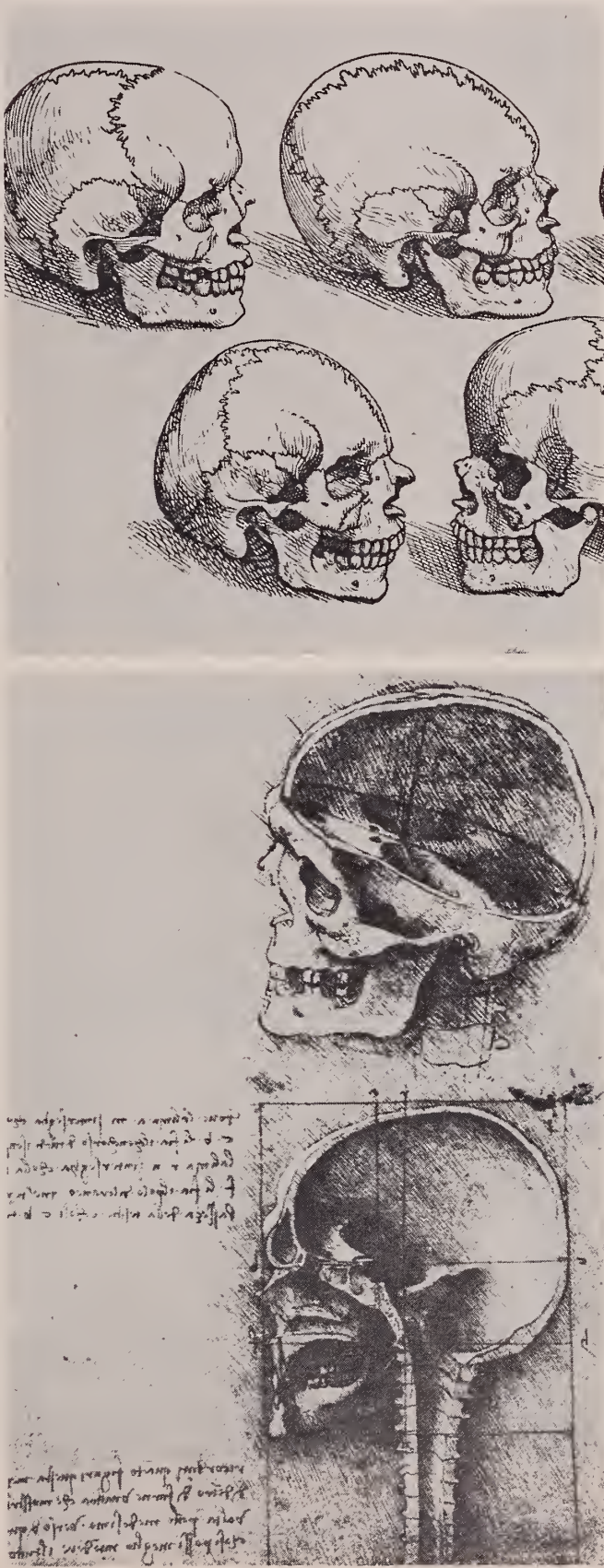
The idea of leaving the young clinical investigator alone to do his work and giving him adequate support has been lost sight of completely. The so-called "pure" scientist can find support from many sources and is often paradoxically free of academic interruption, especially if he works in a hospital. It is the young man who wants to follow both roads together, clinical study and laboratory science, who must be freed and supported. It is because of him, not because of the career laboratory scientist, that we must go back to the simple concept of the full-time system, now essentially abandoned, for the support of the talented young surgeon.

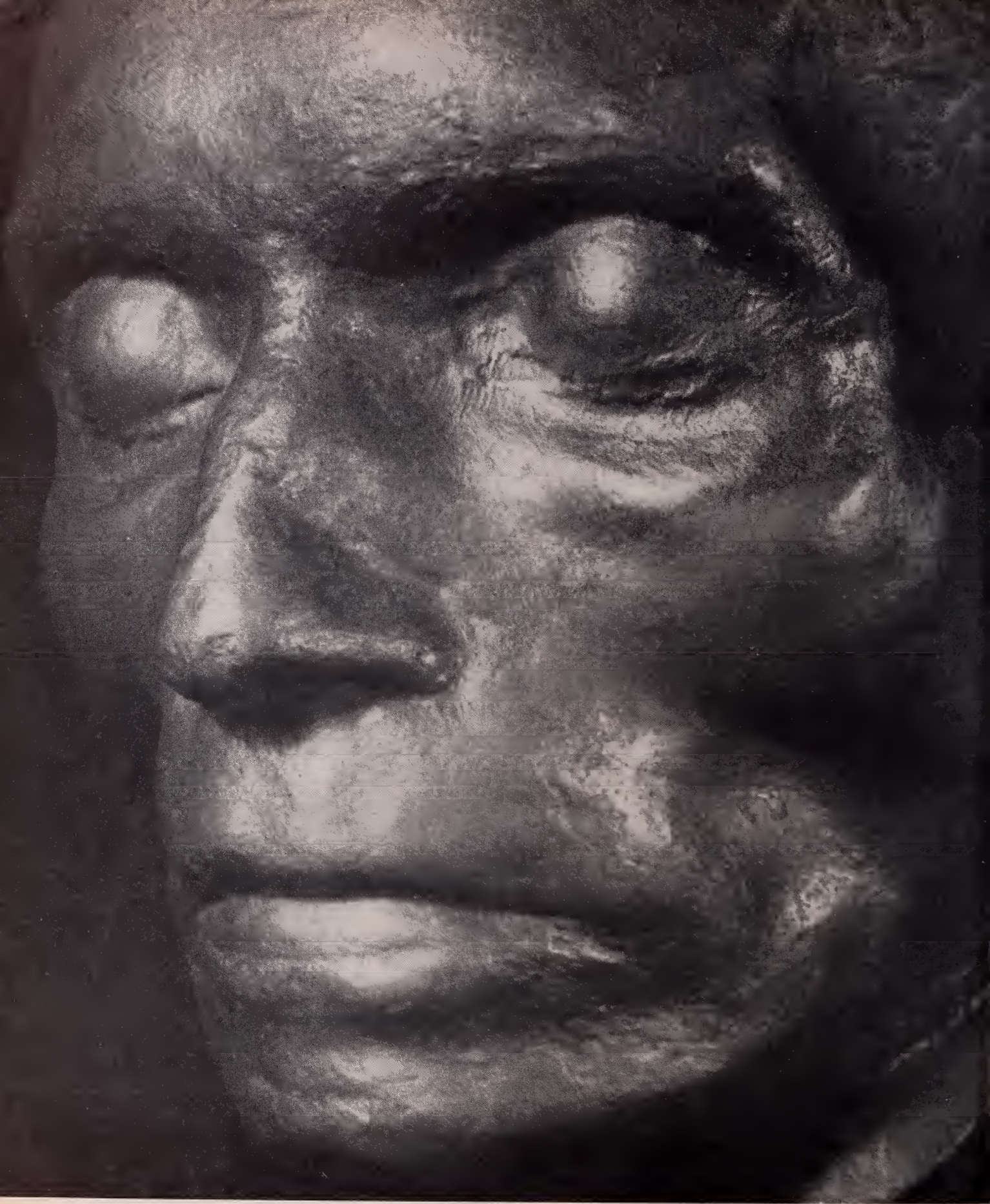
The disturbing fact that we are drifting by small degrees away from the full-time system, so elaborately constructed about fifty years ago, is largely due to shrinking university endowments and sorely pressed hospital funds which will not permit the most important people in the younger age group to enjoy the freedom of full-time devotion to clinical investigation. A man in the first ten years out of his residency, with a wife and from two to six children, has to have support if he is to be free to study. Most departments have tried to seek out a solution through national grants, but even these, with few exceptions, are very limited as a source of continuing personal support. As a result, many young doctors find it to their economic advantage either to do nothing but research, in which case they retire to the laboratory, or to pursue entirely clinical practice, in which case they do well financially but their value to the advance of surgery is lost.

The need to follow the two roads at once not only applies to the individual but also to the balance within the hospital staff. While the laboratory is at the heart of the advance of modern medicine, under no circumstance should it be permitted to take control. The teaching hospital, to be a place of good investigation in the hundred years to come, must seek first and foremost to maintain its status as a place for the good care of the patient.

Our task today is to foster the careers of people who are talented and willing to contribute by keeping surgery and science close together. For this to be possible we have to go back to the fundamentals of modern academic life and re-explore the meaning of the full-time system. Hospitals and medical schools have thus a remarkable opportunity and also a responsibility in seeing to it that young men of great talent are not distracted by the need for practice during the years in which they can make the greatest contributions both to science and to surgery. It is they who will keep the two roads well paved and well traveled in the future years.

The skull: Leonardo (below), and Vesalius (above). Leonardo uses both coronal and sagittal sections. His rendering of the cervical vertebrae is stylized, probably because his specimen had been decapitated.





DEATH MASK OF BEETHOVEN

Photograph By Trude Fleischmann, New York

The Dying Patient and His Doctor

"Not With a Bang, But a Whimper"

Roger Bulger, '60

THERE WAS A SOFT GURGLE followed by a gush of clear fluid that poured out of her mouth and onto her chest. "She's dead", I thought. "My first death." The intern, in his second week at the Boston City Hospital, rushed off confusedly to try to do something about it. She was his patient. She was dead. He was the intern. I was only the fourth year medical student and had no ultimate responsibility, and actually accepted the fact of her death minutes before he did. It was an awesome experience — I had finally witnessed that against which all medicine is aimed. Like most of us, I wanted never to lose my respect and sense of awe for death. I vowed that at each subsequent deathbed I would recall, or try to recall, some of the feelings that moved me this first time.

One week later, we rushed down the ward to the bedside of an apneic, cyanotic, cardiac patient, aged 65. An intern was thumping on the patient's chest — I tried to figure out what I would do next were I the intern. The epinephrine was injected into the patient's heart. I was waiting and hoping for my first open thoracotomy at this, my third deathbed. But the intern decided against it. I was disappointed. The patient's heart had stopped. If he had held out a few minutes longer, there might have been a thoracotomy. Another student ran out to get an ophthalmoscope in order to try and see what was happening in the fundi at the hour of death. My interest picked up again. He returned and looked in. Zealously, in my turn, I pulled back the dead lid, satisfied in my pursuit of knowledge, happy with my intellectual curiosity, focused the ophthalmoscope, and saw, realized, remembered what I was doing.

The awareness at this time of the obvious defect in my attitude and my perplexity over how to repair it brought to mind the somewhat curious statement made to me five years ago by a practicing internist who said that one of the most startling, humbling, yet exciting aspects of the practice of medicine for him was to be with, and to somehow try to help, patients who, with their backs up against the wall, finally turned around to confront death.

It is a curious fact that we as future physicians spend countless hours learning about life, how to preserve it, and learning about diseases, how they can kill, and yet, we can avoid thinking about death as well as the next fellow. Surely, we are young — we have not really entertained the thought of not being. Nevertheless, it seems appropriate that we, in some senses, should be experts about death, and that we not misinterpret that 11th medical commandment, which says, "Thou shalt not get emotionally involved with your patients."

Our society, rightly or wrongly, for better or for worse, predisposes us to the position that death is the ultimate evil — the thing to be avoided at all costs. As K. R. Eissler says in his book *The Psychiatrist and the Dying Patient*:

"Present-day American culture is remarkable by the fact that a bereaved person does not make his state externally noticeable . . . there is a denial of the meaningfulness of death . . . and modern man is expected to maintain the aggregate of his social functions undisturbed by the occasional accident of losing a beloved person, just as he is expected to depart from life without causing a disturbance."

It is obviously crucial to teach medical students the intricacies of every method or technique that might possibly bring someone back from *extremis*. It is vital that no potential life-saving step be overlooked, but it does seem somewhat symptomatic that few words, if any, have ever been spoken to us about how to help a man die. It is our duty to see that he dies "in balance," but no one has ever suggested that we ought to make an attempt to care for his psyche during his last hours. We all believe that it is poor medicine not to "treat the whole patient," and furthermore we will expend a great deal of energy in enhancing his physical comfort in small ways, which may have no influence on the final outcome of his sickness — and yet it is not always noticed that a dying man very often seems to have less attention

paid to him than to the patency of the multiplicity of tubes that are entering him from every direction, and which will enable us to study posthumously his last, hopefully balanced, chemistries. It is not always noticed that more real effort is expended to get autopsy permission than to see to it that the patient does not die alone. It is almost as though, as doctors, we express our denial of death by focusing our attention upon the tubes, the chemistries, and the autopsy.

We tend to regard our treatment as having failed if the patient dies. "Successful treatment" is a term too often reserved only for those who live. One could submit another category, that of the successfully treated terminal event. One could suggest that the physician throw off his scientific mantle when at the deathbed, and become something else — and that something ought to be whatever the patient requires. It is apparent that, in order for a physician in modern America to do this, he must be capable of dealing sympathetically with agnostic, atheist, Protestant, Jew, or Catholic, with what he may consider personally to be unreason, superstition, or sheer lunacy. It is hard for a student to talk about this ability in a physician because it seems that experience, both external and internal, as well as sincere effort are needed before one can succeed in becoming expert (if indeed one ever can) at helping the dying person through his death. Here, if anywhere, is the greatest stronghold of the practice of the art of medicine; here, as in every other area of medicine, is what one accomplishes proportional to what one offers; here, too, is what one offers proportional to what one knows.

It is clear that we ought to be familiar with the concept that death is a cruel and utter end to some people, while only a transition to something better or worse to others, and that we ought to be willing to act accordingly in our relationships with our patients. It is also obvious that any consideration of death does become philosophical and theological, and is therefore rather subjective, although Eissler, for example, looks forward to the day when the psychology of dying will be "scientifically" understood. But there must be something more we can know, objectively, collectively, to sharpen our sensibilities, deepen our insight, broaden our background, and thus enhance our understanding of any given patient in his last hours. Operating on this premise, I thumbed through the macabre drawer in the Widener Library card catalogue labeled "Death," and found that death has meant different things to different people and to different cultures, that rites and rituals, myths and symbols have grown up around the terminal event and that an understanding of these varying attitudes is both interesting and revealing.

It is curious to note, though there well may be evidence to the contrary, that man seems to be the only animal who has an awareness of death — that it is going to happen to *him*. This idea is supported by obser-

vations of baboons made by Zuckerman in his classic study in 1932 on *The Social Life of Monkeys and Apes*. It seems that with baboons it is the custom that there is only one male who, by virtue of his own physical dominance, is allowed to enter into any sexual relationship with the girls of the herd. When this male, who for so long has made virtual monks of the baboons, becomes old and tired, bursting libidos produce great hand-to-hand struggles over any given female. During these combats the female stands close by, awaiting the victor. More often than not, however, she is struggled over literally as well as figuratively and is killed in the process. Her dead and limp body seems to make no impression whatever on the fighters as they persist in tugging her back and forth until one finally emerges victorious. He carries her away and treats her as a new-found wife until he becomes discouraged with her rather disinterested attitude and leaves her, apparently feeling that phylogeny had over-rated the whole thing and not seeming to have understood death.

The habits of man have been quite contrary to those of the baboon, at least as regards his attitude towards death. Whole civilizations have been built upon an almost obsessional concern with death. It is certainly true that various eras may be characterized by their particular views of death. The Greeks and Romans, though their concept of afterlife had considerable variability, shared by and large in treating death lightly, consciously driving the thought and fear of dying from their minds. As Seneca said,

"There is nothing that nature has made necessary which is more easy than death. What a shame, then, to stand in fear of anything so long that is over so soon. It is not death itself that is dreadful, but the fear of it that goes before."

Several hundred years later, Shakespeare, though far from pagan, said much the same thing:

Cowards die many times before their deaths;
The valiant never taste of death but once.
Of all the wonders that I yet have heard,
It seems to me most strange that men should fear;
Seeing that death a necessary end
Will come when it will come.

Epicurus summed it up for himself and his followers through the ages by saying:

"When I am, death is not, when death is, I am not; therefore, we can never have anything to do with death."

Religious societies produce martyrs, as with the Jews of the Old Testament who preferred to die rather than to eat any unclean thing and thus defile themselves and

profane the holy Covenant. As Christianity swept the Western World, so did the idea that dying was a happy event, because it meant the soul's birth to utter and complete bliss, although it must be added that the opposite type of eternity was also a very real possibility. The following anecdote concerning St. Catherine of Siena, a most ascetic individual, is a striking illustration of the Christian capacity to embrace death almost gladly.

(Catherine had brought joy to a young political prisoner condemned to death by telling him that she would accompany him to the place of execution.) " 'At last, he arrived,' continues the saint, 'gentle as a lamb and seeing me began to smile. He would have me make the sign of the cross on his forehead and when he had received it, I said to him in a low voice, 'My dear brother go thou forth to the marriage feast to rejoice in the life that never ends.' He leaned forward with great gentleness, and uncovered his neck ready for the blow of the axe. I had bent down to whisper to him, and remind him of the blood of the Lamb of God that taketh away the sins of the world. His lips only replied, 'Jesus, Catherine,' and as he said these words I received his head into my hands.' " (Upon this the saint sees in vision our Lord receiving his penitent into the treasury of His Mercy.)

Throughout the course of Western civilization there have always been honorable and noble deaths, but perhaps the highest expressions of this sort of death have been British. Sir Walter Raleigh combines the best of Mark Antony and Joan of Arc in this report of his death by William Oldys.

"The next morning, being Thursday, the 29th of October (1618), Sir Walter Raleigh was conducted by the sheriffs of Middlesex, to the Old Palace Yard in Westchester, where there was a large scaffold erected before the parliament-house for his execution . . . He mounted the scaffold with a cheerful countenance, and saluted the lords, knights, and gentlemen of his acquaintance there present. The proclamation being made of an officer for silence, he began his speech as follows:

'I thank God, that He has sent me to die in the light, and not in darkness. I likewise thank God that he has suffered me to die before such an assembly of honorable witnesses, and not obscurely in the Tower; where, for the space of thirteen years together, I have been oppressed with many miseries. And I return thanks, that my fever hath not taken me at this time, as I prayed to Him it might not, that I might clear myself of some accusations unjustly laid to my charge, and leave behind me the testimony of a true heart to my king and country . . .

'But this I here speak, it is not time for me to flatter or fear princes I, who am subject only unto

death: and for me, who have now to do with God alone, to tell a lie to get the favour of the king were in vain: and yet, if ever I spake disloyally or dishonestly of the king, either to this Frenchman or any other, ever intimated the least thought hurtful or prejudicial of him, the Lord blot me out of the book of life . . .

'And now I entreat, that you all will join with me in prayer to that great God of heaven Whom I have grievously offended, being a man full of vanity who has lived a sinful life in such callings as have been most inducing to it: for I have been a soldier, sailor, and a courtier, which are courses of wickedness and vice; that His almighty goodness will forgive me; that He will cast away my sins from me; and that He will receive me into everlasting life: so I take my leave of you all, making my peace with God.'

The proclamation, having been made, that all men should depart the scaffold, he prepared himself for death, giving away his hat and cape and money to some attendants who stood near him. When he took leave of the lords and other gentlemen, he entreated the lord Arundel to desire the king, that no scandalous writings to defame him might be published after his death; concluding, 'I have a long journey to go, therefore must take my leave.' Then having put off his gown and doublet, he called to the headsman to shew him the ax, which not being suddenly done, he said: 'I prithee, let me see it. Dost thou think that I am afraid of it?' Having fingered the edge of it a little, he returned it, and said smiling to the sheriff, 'This is a sharp medicine but it is a sound cure for all diseases.' And having entreated the company to pray to God to assist and strengthen him, the executioner kneeled down and asked him forgiveness; which Raleigh, laying his hand upon his shoulder, granted. Then being asked which way he would lay himself on the block, he answered, 'So the heart be right, it is no matter which way the head lies.' As he stooped to lay himself along, and reclined his head, his face being toward the east, the headsman spread his own cloak over him. After a little pause, he gave the sign that he was ready for the stroke by lifting up his hand . . ."

Robert Browning adds a nineteenth century touch, which expresses, in these lines from a poem about the fear of death, an idea of importance even to the modern physician:

"I was ever a fighter, so — one fight more,
The best and the last!
I would hate that death bandaged my eyes, and
forebore,

(continued on page 53)

This is the second in a series of articles
on Eastern European Medicine

The Romanian Medical Scene

Stefan and Ileana Issarescu



A twelfth-century castle at Bran, Romania, was the home of Princess Ileana and her family during and after the War. At the bottom of the hill is "Spitalul Inima Regina," — The Hospital of the Queen's Heart — the hospital which the Princess founded and directed.



The authors in Florence

TO MAKE any kind of appraisal of the medical situation in the Romania of today we have to have at least a fleeting knowledge of the development of sanitary conditions before this unfortunate country fell behind the iron curtain.

Before World War I, all the hospitals being heavily endowed, hospitalization of both rich and poor was entirely free of charge. After the war a great and necessary land reform was carried out by which 85% of the arable ground was divided among the peasants. The hospitals, whose estate consisted primarily in farm lands, suffered greatly by this reform, although the state took over the responsibility of the deficit. Under this arrangement the hospitals still maintained 60% of their beds free of charge.

There were three medical schools in Romania attached to the universities of Bucharest, Jassy (Moldavia) and Cluj (Transylvania). All three had a very high standing, most of the professors held degrees from France, Germany, Austria, and England, and in the years shortly before World War II many students were finding their way to the United States. Names such as Babes, Marinescu, Levaditi, Palade, known for their contributions to medical world literature and frequently encountered in medical textbooks, were connected with these three universities. On the whole, medical technicians were exceptionally good in Romania. The nursing profession still left much to be desired, although great efforts were being made, and this problem was the special concern of the three consecutive Queens. The first nursing school, St. Elizabeth's, was founded by the first Queen who was known by her literary name of Carmen Sylva. The University of Cluj also maintained an excellent school of rural and district nurses and midwives. The third school, the Regina Maria School of Nursing founded in the late thirties was the best. This was a Rockefeller Foundation School attached to the Coltea Hospital in Bucharest. Its director, Dr. Eugenia Popa, although an M.D., felt the necessity of expert nursing to be so urgent that she gave up her medical practice to enter the Nursing School of the Nashville General Hospital in Tennessee. She completed the full course in nurses' training there, in order to equip herself to head the Regina Maria School.

The large towns were well equipped with large state- or city-supported hospitals, each with its own nursing school, but these did not come up to the standards mentioned above. Besides this, there were several first-class private hospitals, and many of the larger villages had

small hospitals, infirmaries or very efficient maternity clinics. This was especially true in the Crown Domains or larger industrial areas. Romania was also one of the few countries where the majority of the industries maintained kindergartens for the children of their women employees. The Communists have maintained and multiplied such establishments.

We must take these facts into account when estimating the present situation and in their light judge how much the actual improvement, if there are any improvements, are due to natural progress, and how much is due to the spontaneous initiative of the Communist regime.

The prime killer in Romania has always been tuberculosis. The chief agent in the battle against this disease was a private agency, The Institute for the Prevention of Tuberculosis, which had state backing. The greatest promoter of the Institute was the late Queen Marie. This was in the pre-antibiotic days, so that isolation and proper alimentation in sanitariums (in the mountains for pulmonary patients and by the sea for bone tuberculosis patients) were the basic means of treatment. At the end of the first World War the child mortality due to tuberculosis was 25% of all children. This had been successfully reduced to 2.5% thanks also to the BCG vaccine, which was introduced in the 1920's. Today it is claimed that this has been further reduced. Prophylactic medicine always has and will encounter enormous difficulties because the Romanian villages are widely scattered in regions of difficult access with many outlying farms and mountain ranches. The author is well acquainted with some of the mountain regions and knows that it may take a day to reach one such ranch. The traveling has to be done on horseback. The homes are small and, though extremely clean, isolation of the patient is an impossibility, and the inhabitants are also mistrustful. For this they have, with their sad history of invasions and extortionist foreign powers, good reason.

The Institute for the Prevention of Tuberculosis, which had done tremendous work has been declared by the Communist authorities to be irremediably reactionary, "unre-educatable," anti-democratic and anti-social. Many of the Institute's sanatoria were taken over to serve as Russian Army hospitals and the patients sent elsewhere, mostly to their homes. The lot of the sufferers of bone tuberculosis was the most tragic. These were taken from their perfectly appointed sanitarium in Bugaz on the Black Sea and the Danube River and transported to a hotel in Tekirghiol, an erstwhile summer resort. Not only was the building completely inadequate but the patients were underfed, the staple food being cornmeal, meat only once a week, and milk and eggs an almost unknown luxury. The drug supply was insufficient, there were no bandages and no plaster for making casts and no cotton for padding. All equipment was very rudimentary and mostly improvised. Walking through the wards of this hospital in 1947 was one of the author's most tragic experiences. There is no present data obtainable on this subject but the general

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policy of Communist regime was to let the incurables, and those who needed too long and costly treatment, die. This neglect was not a consequence of the War, but of deliberate Communist policy.

For the depiction of the present sanitary conditions in Romania we are dependent first of all upon our own experiences before leaving Romania in 1948, then upon the reports gleaned from refugees of the last two years and finally upon the official information from the Romanian Popular Republic.

The official information falls into two categories: a) the official bombastic propaganda of the Communist Government's accomplishments; b) the criticisms in the daily press of the failures to meet the set standards. The criticisms are on the whole much more revealing. All reports however have a political slant, the appraisal is political, not scientific; therefore, it is only by reading between the lines and by deduction that one can form an opinion.

Since November 1958, all private medical offices have been closed; only doctors over the age of seventy are permitted private practice. The other doctors give consultations within the state hospitals or polyclinics (there are no private hospitals) according to a duty schedule. All patients must pay an established fee of 100 lei (\$10) to a professor and 45 lei to a general practitioner. Of this the professor may retain 30 lei, the general practitioner 15, the remainder going to the state. At the conclusion of the

month the doctors pay an additional tax of 10% on the gross sums received. From what is left over they have to pay 10% to their nurses. This leaves the general practitioner with 94¢ of his \$4.50 call.

For the sake of world opinion, it was necessary that the nationalization of private practice be represented as a grand patriotic movement, rather than as a legal decree. The Party's official organ, the *Scantea* heralds these changes characteristically: ". . . The mass of medical doctors are sensible of the fact that the conditions are ready to restrain private medical practice. This explains why an ever-increasing proportion of medical doctors take part in the patriotic movement of renouncing, on their own initiative, their private practices. . . ."

Things were simply made impossible for private practice. Doctors' offices were declared unhygienic or doctors were found not to have paid their taxes; they were accused of malpractice; any small excuse was good enough to close their offices. The nationalization was, in fact, carried out through terror. The Dean of the School of Medicine of Bucharest, Dr. Burgele, an eminent surgeon and known in old days for his integrity, was brought to publicly criticize himself and to admit that any doctor who gave consultations at home or visited patients in their homes was a capitalist speculator. His tragic example was followed by other doctors in Jassy, Cluj and Timisoara. Since this "free" decision, calls at the homes of patients have become illegal except for a few specially





Princess Ileana writes: "... Nursing was the fulfilling of a deep need within me ... my love of people and the desire to worship God in the service of human beings found expression in caring for the sick ... What I did not know, I soon learned under the difficulties and great stress of war ..."

licensed doctors whose names must be posted on drugstore doors. The fee for such a visit is 50 lei (\$5).

One can imagine how "free" such a movement of patriotic renouncement was, especially if one remembers that patients who are not in the working field have no right to medical care in the state hospitals or polyclinics. Even in 1946 and 1947, private patients in any hospital had to provide their own drugs and even the catgut and anesthetic necessary for surgery and treatment. These were obtainable only through the black market.

All doctors and nurses have, since 1946, been obliged to come to all political gatherings and indoctrination groups organized within the hospital complex. These political cells were under the direction of one of the laboring-class members of the hospital staff, such as locksmiths, gardeners or furnace men. The gatherings were and are organized in complete disregard of the hospital's schedule. The beautiful buildings of the Regina Maria School of Nursing, built on American lines, were converted into apartments for Ministry of Health employees, and nurses were forced to house in the quarters for domestics.

The situation in mental hospitals has also considerably worsened, since the cases have multiplied by 100%. The chief reason for the aggravation is overwork, continuous tension, difficult and overcrowded living conditions, persecutions, malnutrition, and, specifically in Bukovina, pellagra. There are great shortages of hospital beds and long waiting periods, during which time the patients have to be cared for by their own families. (It must be remembered that few families can boast more than one room.)

There is a great shortage of skilled technical personnel for laboratory work. Most of the old teaching staff has died or has been purged as politically unreliable and has been replaced by medically incompetent holders of party cards. Consequently, there is no place an M.D. can go for training in clinical pathology.

Abortions are legal at a fee of 25 lei, in any sanitary center at the pregnant mother's request (Decree #463, issued Sept. 23, 1957 by the Great National Assembly). The picture is truly grim. There is one field in which we can, I think, speak of improvement — where contagions are concerned. The precautions against infectious diseases such as typhoid fever, typhus, and diphtheria were drastic and expert. Here the totalitarian regime comes out to advantage; the sanitary measures are carried out with complete thoroughness, at gun point when necessary. They are able to stem epidemics with remarkable quickness and no expense is spared in material and manpower. Preventive medicine is a hobby horse of the Communist regime and, to do them justice, they have succeeded in bringing about some amelioration to this problem. The number of polyclinics and dispensaries have greatly increased. Young medical graduates, following the U.S.S.R. model, are forced to take up practice in villages and small towns for at least two to three years before being able to specialize or practice in bigger centers. This, however, is not an original idea; already in the 1930's, young medical students were required to give their services for a period of six months in rural districts before starting practice or specialization.

Medical care is free, and if this were applied to the whole population it would be wonderful; but it is applied only to the working class, that is to say those who hold workmen's cards (work may of course be intellectual). This excludes all old people who can no longer work and those "unworthy of work or pension," and this category is composed of all who by their antecedence are beyond the Communist pale, or who have at some time incurred the regime's displeasure, whatever their social class might have been. It also excludes those recently released from political prisons, and almost every family in Romania has one such member.

Drugs of any kind are very scarce. Special drugs are worth their weight in gold; only the privileged ruling class can obtain them. High and low, all have an almost superstitious faith in American wonder drugs. Much of the trade in these drugs is done through the Black Market, or by the offices of some kind and daring foreigner. Russian drugs are regarded with deep mistrust; even Russian soldiers in Romania refuse Russian penicillin!

Life itself in Romania under the present regime is tragic. The isolation from anything but the Communist World makes life a heavy burden. When the medical profession is at the mercy of a totalitarian regime, even improvements and aids become odious just because they are imposed, and there is no mercy in it, only utilitarianism for the sake of the state. What is so difficult for the free Westerner to comprehend is that the Communist regime does not in the least care for the individual; it is only in his usefulness to the state that he is at all considered worth salvaging. Therein more than in anything else, lies the tragedy of the medical profession behind the Iron Curtain.

THE POET: A Physician to All Men

ENDYMION

A thing of beauty is a joy forever:
Its loveliness increases; it will never
Pass into nothingness; but still will keep
A bower quiet for us, and a sleep
Full of sweet dreams, and health, and quiet breathing.
Therefore, on every morrow, are we wreathing
A flowery band to bind us to the earth,
Spite of despondence, of the inhuman dearth
Of noble natures, of the gloomy days,
Of all the unhealthy and o'er-darkened ways
Made for our searching: yes, in spite of all,
Some shape of beauty moves away the pall
From our dark spirits.



SIX DOCTOR-POETS illustrate the theme that medicine and poetry often share a common impulse. Two of these are Englishmen, two are Harvard Medical School Professors, and two are contemporaries, one of whom is presently a medical student.

JOHN KEATS

To complete the medical training that the early nineteenth century prescribed, Keats spent four years as an apprentice to an apothecary-surgeon and one year in the London hospitals of Guy's and St. Thomas's. He soon gave up medicine for poetry, but his concern for humanity continued to link the two in his mind. He writes to a friend in 1818, "I find there is no worthy pursuit but the idea of doing some good to the world," and in the same year thought of going to Edinburgh to take up medicine again. In his last poem, *The Fall of Hyperion* of 1819, he writes that those alone can qualify as poets "to whom the miseries of the world are misery, and will not let them rest"; the poet, then, who can respond to and comfort others is "a sage, a humanist, physician to all men." A little more than a year after writing these lines, Keats — who had noted methodically and accurately the progress of his disease — was dead of tuberculosis at the age of twenty-five.



ROBERT BRIDGES

Robert Bridges was Poet Laureate of England from 1913 to 1930 for no more political reason, says his fellow poet Louis Untermeyer, than that he was zealous and distinguished in his art. The son of a leisured Kentsman, Bridges chose to become a doctor because he felt that medicine would give him the broad background and understanding which he needed for his poetry. He planned to practice only until he was forty, but an illness at thirty-eight induced an early "retirement," and he thereafter entered what has been described as the longest span of middle years a poet ever enjoyed. As a doctor he was extremely sensitive to suffering, and his medical record, an *Account of the Casualty Department at St. Bartholomew's Hospital*, stands as a classic of concise, clear and moving prose. For the modern ear, his poetry often sounds antiquated, although he died in 1930. However, he was born in 1844 and as a boy watched the full-sailed warships, "those murderous queens walking in Sabbath sleep," as they passed the high Kentish Coast en route to the Crimean War.

ON A DEAD CHILD

Perfect little body, without fault or stain on thee,
 With promise of strength and manhood full and fair!
 Though cold and stark and bare,
 The bloom and the charm of life doth awhile remain on thee.

Thy mother's treasure wert thou; — alas! no longer
 To visit her heart with wondrous joy; to be
 Thy father's pride; — ah, he
 Must gather his faith together, and his strength make stronger.

To me, as I move thee now in the last duty,
 Dost thou with a turn or gesture anon respond;
 Startling my fancy fond
 With a chance attitude of the head, a freak of beauty.

Thy hand clasps, as 'twas wont, my finger, and holds it:
 But the grasp is the clasp of Death, heartbreaking
 and stiff;

Yet feels to my hand as if
 'Twas still thy will, thy pleasure and trust that enfolds it.

So lay thee there, thy sunken eyelids closing, —
 Go lie thou there in thy coffin, thy last little bed! —
 Propping thy wise, sad head,
 Thy firm, pale hands across thy chest disposing.

So quiet! doth the change content thee? — Death,
 whither hath he taken thee?
 To a world, do I think, that rights the disaster of this?
 The vision of which I miss,
 Who weep for the body, and wish but to warm thee and
 awaken thee?

Ah! little at best can all our hopes avail us
 To lift this sorrow, or cheer us, when in the dark,
 Unwilling, alone we embark,
 And the things we have seen and have known have
 heard of, fail us.

THE STETHOSCOPE SONG

A Professional Ballad

There was a young man in Boston town,
He bought him a stethoscope nice and new,
All mounted and finished and polished down,
With an ivory cap and a stopper too.

It happened a spider within did crawl,
And spun him a web of ample size,
Wherein there chanced one day to fall
A couple of very imprudent flies.

The first was a bottle-fly, big and blue,
The second was smaller, and thin and long;
So there was a concert between the two,
Like an octave flute and a tavern gong.

Now being from Paris but recently,
This fine young man would show his skill;
And so they gave him, his hand to try,
A hospital patient extremely ill.

Some said that his *liver* was short of *bile*,
And some that his *heart* was over size,
While some kept arguing, all the while,
He was crammed with *tubercles* up to
his eyes.

This fine young man then up stepped he,
And all the doctors made a pause;
Said he, The man must die, you see,
By the fifty-seventh of Louis's laws.

But since the case is a desperate one,
To explore his chest it may be well;
For if he should die and it were not done,
You know the *autopsy* would not tell.

Then out his stethoscope he took,
And on it placed his curious ear;
Mon Dieu! said he, with a knowing look,
Why, here is a sound that's mighty queer!

The *bourdonnement* is very clear, —
Amphoric buzzing, as I'm alive!
Five doctors took their turn to hear;
Amphoric buzzing, said all the five.

There's *empyema* beyond a doubt;
We'll plunge a *trocar* in his side.
The diagnosis was made out, —
They tapped the patient; so he died.

* * *



OLIVER WENDELL HOLMES

Many contemporaries of the elder Oliver Wendell Holmes were reluctant to take seriously his medical efforts because of his fame as a man of letters and as a humorist. His *Autocrat of the Breakfast Table* essays obscured for many years his excellent medical treatises on such subjects as puerperal fever and homeopathy. As the Parkman Professor of Anatomy at Harvard Medical School from 1847 to 1882, he not only found time to liven up the "dry bones" in a manner which made his lectures the most popular at the School, but managed to write a collected works totalling fifteen volumes, including two volumes of verse, mostly humorous or narrative, and three rather polemic and, some say, long-winded novels.

This poor young man was all aghast;
The price of stethoscopes came down;
And so he was reduced at last
To practise in a country town.

The doctors being very sore,
A stethoscope they did devise
That had a rammer to clear the bore,
With a knob at the end to kill the flies.

Now use your ears, all you that can,
But don't forget to mind your eyes,
Or you may be cheated, like this young man,
By a couple of silly, abnormal flies.

LINES TO MR. T. S. ELIOT,
WHO IS COMING TO HARVARD

Were T. S. Eliot here to share my toil
Shoveling manure on this fresh harrowing,
So that the frost may smelt it with the soil,
And alchemy of sun and rain may bring
Into the sod's dry veins a fecund blood,
To wake the dormant pregnancies of Spring —
Fatten the hungry roots — force into bud,
Not hyacinth and rose nor fragile things
That serve to sponsor timid lovers' quests,
But cabbages and beans and harvestings
That hold mankind a suckling on the breasts
Of Mother Earth; he, too, would breathe the free,
Autumnal wind — would feel the sweat
Of joyous strength; would cease to be
"An old man in a dry month"; and forget
Ravenna's bedbugs, Princess Volupine's
Perfumed libido, and lubricity
Of Alfred Prufrock's tired endocrines.
He'd smell the fog that blows in from the sea,
His native air; and, in deep-throated tone,
He'd sing the songs we've wished for; could his brain
But learn to leave his spinal cord alone,
And each attended to its own domain.

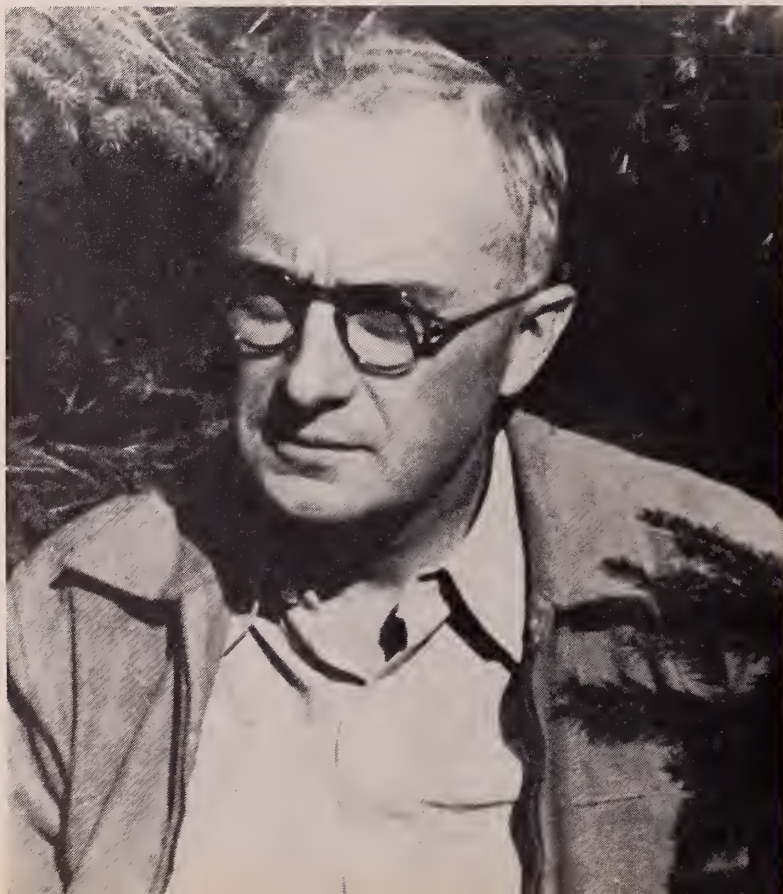
HANS ZINSSER

Because he felt that he would never excel at his first love — poetry — Hans Zinsser chose biology — his second love — as a profession. He discovered in biology "a romantic appeal hardly less potent than that which had attracted him to the arts," but he did not turn away from a writer's career without a "permanently wistful desire" in that direction. Later, when he was a famous bacteriologist at Harvard Medical School, and an experiment happened to be going badly, he would spend his nights composing sonnets. One quart of whiskey, he said, could usually put him in the mood for a sonnet; but he felt that scientific papers, like horseback riding which he loved, should be done in cold sobriety. When it came to writing educational essays or pedagogical treatises, he said, a spot of beer was just about right to create a properly "pompous-ass" frame of mind. As an expression of Zinsser's "permanently wistful desire," two prose volumes appeared in the last five years of his life: *Rats, Lice, and History* in 1935, and *As I Remember Him*, an autobiography, in 1940. The one slim volume of his fresh, lovely and often humorous poetry, entitled *Spring, Summer and Autumn*, begins in youth and spans the whole of his adult life until just before his death of leukemia in 1940.



WILLIAM CARLOS WILLIAMS

"When they ask me, as of late they frequently do," writes Dr. William Carlos Williams, "how I have for so many years continued an equal interest in medicine and the poem, I reply that they amount for me to nearly the same thing. Any worth-his-salt physician knows that no one is 'cured.' The cured man, I want to say, is no different from any other. It is a trivial business unless you add the zest to the picture . . . And my medicine was the thing which gained me entrance to the secret gardens of the self." A general practitioner and pediatrician who has practised all his adult life in Rutherford, N. J., and in the Paterson, Passaic and New York City hospitals, Dr. Williams, now 77 years old, has been astonishingly prolific in plays, novels, short stories and, most of all, in poetry. "Time after time," he writes, ". . . I would start out on my morning calls after only a few hours' sleep, sit in front of some house waiting to get the courage to climb the steps and push the front doorbell. But once I saw the patient, all that would disappear. In a flash the details of the case would begin to formulate themselves into a recognizable outline, the diagnosis would unravel itself, or would refuse to make itself plain and the hunt was on . . . day in, day out, when the inarticulate patient struggles to lay himself bare for you, or with nothing more than a boil on his back is so caught off balance that he reveals some secret twist of a whole community's pathetic way of thought, a man is suddenly seized again with a desire to speak of the underground stream which for a moment has come up just under the surface." "Man is indeed a city," Williams says of his five-volume work called *Paterson*, the city he chose as his symbol.



PATERSON: BOOK FIVE

A flight of birds, all together,
seeking their nests in the season
a flock before dawn, small birds
"That slepen al the night with open Yë,"
moved by desire, passionately, they
have come a long way, commonly.
Now they separate and go by pairs
each to his appointed mating. The
colors of their plumage are undecipherable
in the sun's glare against the sky
but the old man's mind is stirred
by the white, the yellow, the black
as if he could see them there.

Their presence in the air again
calms him. Though he is approaching
death he is possessed by many poems.
Flowers have always been his friends,
even in paintings and tapestries
which have lain through the past
in museums jealously guarded, treated
against moths. They draw him imperiously
to witness them, make him think
of bus schedules and how to avoid
the irreverent — to refresh himself
at the sight direct from the 12th
century what the old women or the young
or men or boys wielding their needles
to put in her green thread correctly
besides the purple, myrtle beside
holly and the brown threads besides:
together as the cartoon has plotted it
for them. All together, working together —
all the birds together. The birds
and leaves are designed to be woven
in his mind eating and
all together for his purposes



RONALD GOLD

"I think Harvard can be thanked — or blamed — for my persistence in writing poetry," says Ronald Gold, who is presently a second-year student at Harvard Medical School. "By giving me a fellowship after college, Harvard enabled me to spend a year traveling and writing in Europe and Asia. Walt Whitman's *Leaves of Grass* and the *Autobiography* of William Carlos Williams were strong inspirations during this time. As far as style goes, Chinese and Japanese poetry impressed me greatly. The oriental poem often presents a contrasting series of images in which the message, if there is any, is implicit in the contrast. In a lot of them, the poet stays out of the poem completely. These two are examples, and I guess they keep up the tradition of imitative first verse. It's hard to say how important poetry will be in my life, although right now, I'm more sure what I want to do in poetry than in medicine. There may be a battle between the two, but I haven't found any conflict as yet. A poem can find expression in the few spare minutes of a day, and, since each poem is a new thought, I never have to worry about the chronology of the preceding two hundred pages."

ANGKOR

As it is forever:
the circle moon blinds the stars,
the crystal silence cracked
by squeaking rushes of bats
flitting through the halls
warmed by the sun-holding stone.

His effluence dry,
the King-God is dead.

Deserted, the four-faced towers
crowning a universe of stone
stare at eternity,
lost in the jungle.

Brown boys
splash in the pond
with water buffalo.

LEAVES,

fallen and dry,
explode with great crackles
as small boys dive through piles
gathered for destruction
by industrious old men.

Aerial view of the Island showing hospital buildings. Fairchild Aerial Surveys, Inc.

LONG ISLAND HOSPITAL

Lying among sunlit "adagios of islands" on the south side of Boston Harbor is Long Island. Since 1887, the island has been home for Boston's chronic disease patients. Until 1952, in fact, when a bridge was built to connect with the Quincy shore, the Long Island Hospital was completely isolated and dependent upon the weather for boatloads of supplies.

At the Harbor end of the island lie the remains of an old Army installation, a grey ghost town in winter weather. Windows are broken and doors flap, and at the farthest tip, high bunkers and concrete parapets tower over the Harbor. The brick barracks which housed blue Union Armies in the Civil War still have fireplaces and huge iron stoves in every room. Later, during two World Wars, the island itself played host to camouflaged warships passing into and out of Boston Harbor.

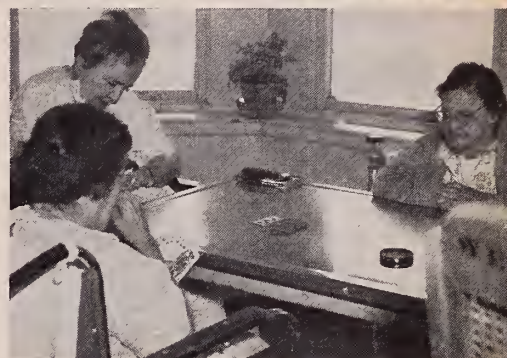
After the War, boat-borne junk dealers ransacked the buildings and when, several years ago, the Army turned the installation over to the City, the buildings were empty and open to the weather. Now, tall grasses grow into the concrete walks and the community is silent.

Midway over the island lies Long Island Hospital. It has functioned as the City's hospital for chronic diseases for over seventy years, and until four

Right top, the greenhouse where patients grow flowers for the Island. The harbor is always busy. In good weather, as many as 200 patients feed the gulls and watch the passing ships from the lawn. Fully half the patient population can be taken outside since none of the wards is over two stories high.



Left bottom, Dr. John Cass, Director of Medical Education for Long Island Hospital, and Steven Podos, a second-year student, examine a patient in the neurological ward.



years ago, was a completely autonomous hospital under the City's jurisdiction. In 1952, when the City opened the bridge which connects Long Island with the Quincy Shore, the first step was made to break the isolation of the Hospital. In 1956, Long Island Hospital was formally joined to the Boston City Hospital as the Chronic Disease Division of the City Hospital.

Of the 1,100 ward and dormitory patients in this sizeable hospital community, a large group are chronic alcoholics. A neurological unit, instituted in 1956, has 300 bed patients for chronic diseases of the nervous system. The remainder of the patient population is made up chiefly of chronic pulmonary, vascular, joint, cardiac, metabolic and neoplastic diseases.

Harvard Medical doctors should remember the Island from student days, since they have come here off and on for many years to study pulmonary diseases. Second-year students still come in groups of four and eight for two visits during the spring each year. Dr. John Cass, Director of Medical Education for the Hospital, also introduces them to the alcoholic and the neurological wards, since he believes these cases are interesting and instructive. "These are mostly people who have exhausted their means and

are too ill to work," says Dr. Cass. "What happens after the usual medical services are through with them? We in the acute hospitals don't see them again. Where do they go? They must have a home. Every large city has to have some institution like Long Island Hospital for the chronically ill and destitute.

"Even our alcoholics lead a fairly happy life here. No one over sixty-five has to work. Lots do, but they are not forced to. Also, they are carefully screened medically so that no one need work if any medical situation so warrants.

"We have a fairly adequate rehabilitation program on the Island, although finding personnel to work here is always a problem. When the alcoholic is ready to get a job, we find one for him. He continues to live on the Island for six months after that, commuting to and from his job. After this, he may return to private life."

The neurological unit of the Hospital, which cares for patients with Parkinson's disease, muscular dystrophy, the choreas, multiple sclerosis and all types of brain damage syndromes, is under the direction of Dr. Derek Denny-Brown's neurological service at Boston City Hospital and is staffed by three City Hospital residents. As Dr. Cass puts it, "It is a practical way of getting our sickest

patients together as a properly run unit."

The Hospital Superintendent is a fully qualified and accredited administrator, Mr. John McGillivray. Eight foreign exchange students presently act as assistant residents and administer the general patient population under the supervision of the chief resident, who is the Hospital's senior medical officer. Presently, the chief resident is an English physician, Dr. John Laing, who sparked a recent controversy in *The New England Journal of Medicine* when he came forth with some less-than-complimentary views on the state of English socialized medicine.

The house staff is assisted and supervised by a visiting group of six internists and a group of fifty consultants. Harvard, Tufts and Boston University Medical Services each take three-month shifts in rotation teaching the foreign residents three mornings a week at the Boston City Hospital. Beginning in July of last year, the Hospital was accredited for one year of teaching in internal medicine.

Dr. Cass, who has been working very hard since 1956 to increase the ties with Boston City Hospital, says: "I foresee the day when all interns at Boston City will spend some of their training period at Long Island Hospital and when one of the City Hos-

pital's chief residents will act as this hospital's chief resident as part of his service. This will ensure the continuity and the quality of medical care toward which we are working. Chronic diseases are constantly becoming a larger portion of the hospital population and their study and care should be an integral and necessary part of the medical school curriculum."

The fir trees have a Mediterranean shape and silhouette the Boston skyline from the shore. The gulls squeal over the whitecaps as the trickle of visitors leaves Long Island Hospital. The grey-haired ladies stare from their sunporch. On the way out the visitor passes the new Nike Base, a sharp contrast to the deserted barracks on the seaward tip.

With a thought for the changing modes of warfare and of patient care, with a pause to admire the beauty of the water, the visitor rides over the bridge, past the sentry box and toward the Southeast Expressway for Boston.

Crossing the bridge from the Quincy Shore. The Hospital can be seen in the distance.



A ghost town on Long Island. The Army buildings at the Harbor end have been abandoned.



BOOK REVIEWS

WALTER A. WELLS, M.D.: *A Doctor's Life of John Keats*, Vantage Press, 1959.

Keats has been described by Bernard Shaw as "not only a poet, but a merry soul, a jolly fellow, who could not only carry his splendid burthen of genius, but swing it around, toss it up and catch it again, and whistle a tune as he strode along." Prolonged and serious illness, however, was a conspicuous feature of his life — his death of tuberculosis at less than twenty-five years of age followed nursing his brother through the terminal stages of the same disease. It is perhaps by now sufficiently well known that he was for a time a practitioner of medicine, such as it was in his day. He served four years as an apprentice to an apothecary (essentially, a barber-surgeon); he spent a year and a half as a student of medicine in Guy's Hospital in London; while at Guy's, he had the exceptional experience of serving as assistant to one of the staff surgeons; subsequently he served for a term in the responsible position of hospital intern. He successfully passed his examination to qualify for practice

even before he had finished his course of study, and before he had reached the required age. We encounter with



A drawing by John Keats

disappointment on page 81 of the present volume this sentence, "It would be highly interesting if we had more information than we have of Keats' experience as a medical student at Guy's." No new material appears in this book and the little that is known is told with a confusion of psychological speculation, digression, invention and repetition. The relation between heredity and environment, illness and productivity, and the arcane nature of Genius and Intuition are discussed intermittently and uninformatively. There is no index.

The "medical" aspect of this book is apt to interest the lay more than the professional reader. Keats is worthy of the devotion Dr. Wells has shown in a book which is clearly a labor of love; and perhaps it is churlish to be too critical. A greater profundity, and more information, will be found in Lionel Trilling's *Selected Letters of John Keats*. A reading of his letters shows that Keats is, and will remain, more alive than any biographer can make him.

GEORGE S. RICHARDSON, '46

FRANCIS D. MOORE, *Metabolic Care of the Surgical Patient*, W. B. Saunders Co., Philadelphia and London, 1959, 1011 pp.

It is fair to say that prior to World War II, the survival and successful convalescence of patients following the stress of major surgery was due more to the beautifully integrated homeostatic mechanisms of the human organism than to any organized methodical management by physicians. In fact, this statement is still true some 20 years later, because present treatment of the postoperative patient consists of intelligent support of the metabolic processes by which the body protects itself against stress and restores itself to health during convalescence. The phrase "intelligent support," however, implies a thoughtful and extensive study by the attending surgeon of the work of the many investigators over the past 20 years who have contributed to our present, reasonably precise understanding of the wisdom of the body.

The results of two decades of metabolic studies as they relate specifically

to the surgical patient have been beautifully organized, synthesized and presented in "Metabolic Care of the Surgical Patient." The author, Dr. Francis D. Moore, the Moseley Professor of Surgery at the Harvard Medical School and Surgeon-in-Chief of the Peter Bent Brigham Hospital, was one of the pioneers of this era of "surgical metabolism." The rapid progress in the basic sciences made available to clinical investigators new biochemical and isotopic methods which Dr. Moore introduced into the study of surgical patients. The results of his first 10 years of work were presented in 1952 in the "Metabolic Response to Surgery." Now he has added further work of his own, analyzed and organized the results of other investigators and presented a clear, readable and yet exhaustive review of the present knowledge in this field.

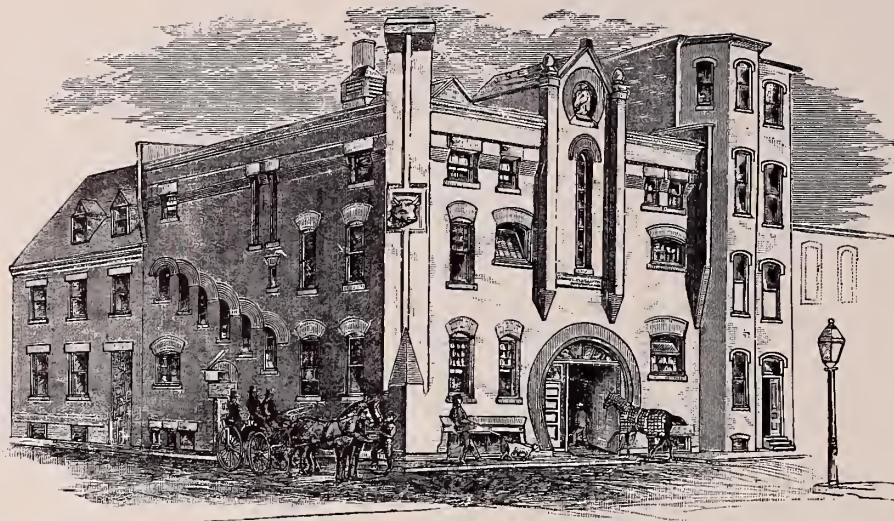
The book is divided into six sections of which Part I deals with the normal response to and the convalescence from stress, Part II with problems related to hemorrhage and changes in blood volume, Part III with fluids and electrolytes and acid-

base balance, Part IV with the changes associated with nutritional alterations and Part V with special problems of visceral disease and Part VI with fractures, wounds and burns.

The author has avoided becoming too entangled in a morass of conflicting hypotheses. The ease and pleasure with which this book may be read stems from an ingenious device of segregating a mass of reference material from the descriptive commentary. The reader who is following the evolution of a concept is not disturbed in his orderly thinking by constant interposition of references; on the other hand, an investigator searching for detail finds a thorough and impartial review entitled "Notes from the Literature" at the end of each major section.

Of necessity, this book is lengthy but, because of the method of organization, the conceptual sections can be and should be read by every surgeon, and as a practical reference source of factual material, it should be a part of every surgeon's library.

WILLIAM V. McDERMOTT, JR., '42



An engraving showing the Harvard School of Veterinary Medicine in Boston's South End during the 1880's. The building, minus embellishments, is currently occupied by the Osgood Animal Hospital and stands at 50 Village Street.

THE recipients of the *Bulletin*, comprising its controlled circulation — a modern term applied to those who subscribe not, neither are they billed — may wonder why Harvard's one-time School of Veterinary Medicine should constitute a "Diagnosis Deferred," however erratic that category may be. The sorry truth is that the party responsible for this department, cornered five days after the deadline by two far from unattractive young women responsible for the production of the publication, bailed himself out of the delinquency on their terms. It was inconsequential that the School had ceased to exist fifty-nine years ago almost to the minute; a deadline demands respect, at least in its passing.

Harvard's experience with animal husbandry was inaugurated in 1882 as an offspring of the old Bussey Institute, according to Morison.¹ An insight into the opportunities it might present for the study of comparative medicine was offered, with his usual astuteness, by the then editor of the *Boston Medical and Surgical Journal*, Dr. George Brune Shattuck. In an editorial of September 28, 1882,² he wrote:

We have only begun to study the reciprocal pathological relations of men and animals. Hydrophobia and glanders suggest well known relationships; trichinosis is even more important and influences strongly an important branch of commerce; and the work of Toussaint and his confreres at Alfort, Lyons and other French veterinary schools, in connection with the researches of Pasteur, opens a field the importance of which to the human race we hardly dare to contemplate.

In the same editorial it was taken as a sign suggesting some sort of happy symbiosis that the appointment of Charles P. Lyman as the first professor of veterinary medicine coincided with that of the new professor of surgery. Dr. David W. Cheever.

Nearly fifteen years later the same source of wisdom in referring to the report of Harvard College for the year 1895 to 1896³ noted that the president advocated a reconstruction of the School of Veterinary Medicine with the formation of a Department of Comparative Medicine. This was to be closely affiliated with the Medical School, under a single Faculty of Medicine. During the same year three new courses were added to the vet-

erinary curriculum, on comparative pathology, on etiology and hygiene of the infectious diseases of animals, and on practice.

These changes came about possibly in response to a warning sounded and a plea made in the previous year by the acting dean; this was also reported editorially in the *Boston Medical and Surgical Journal*.⁴

The conception of the aims and possibilities of a veterinary school is, I fear, very limited in our community. The aim of the school of Veterinary Medicine of Harvard University is not alone that of training men to minister to the ailments of the lower animals. While this is an essential and worthy object, the School has a higher purpose — that of demonstrating the relations in which such diseases stand to the welfare of the human family.

As a result of these academic fermentations the Medical, Dental and Veterinary schools were combined in 1899 under one Faculty of Medicine with the dean of the Medical School as its head, each of the other two preserving its own identity and its own dean and faculty. The Dental School flourished under this arrangement but the Veterinary School "languished in spite

DIAGNOSIS

DEFERRED

Veterinarianism at Harvard

of the efforts of its Dean, Charles Parker Lyman, F.R.C.V.S., and was finally dissolved in 1901."¹ Those of its students who wished to continue with their studies were transferred to the University of Pennsylvania; a few entered the Medical School where they were able to concentrate their efforts on a single genus.

Veterinarianism or, more sedately, veterinary medicine, derives, according to that great lexicographer, Noah Webster, from *veterinarius* "of or pertaining to beasts of burden or draft." It may thus with reason apply to asses, mules and horses, buffaloes, camels, dogs, elephants, llamas, oxen, carrier pigeons, reindeer, yaks, pack rats and possibly whales, in deference to those who have experienced a Nantucket sleigh ride. When one considers the natural extension of the science to animals raised for food, for pets, for laboratory purposes and to admire, like zebras in their zoos and seals in their circuses, the versatility of the veterinarian must indeed put to shame the plodding pedantry of the physician who limits his knowledge to the diseases of man alone. The veterinary surgeon, starting with the aardvaark,

the first animal to enter the Ark, has all creatures but man within his compass even to the zoril, the "South size and form of the common skunk" — the last living creature that one would expect to find in a veterinarian's office.

The veterinarian, moreover, must pit his skill and cunning against the various conditions to which the duck-bill platypus — a web-footed, bird-beaked, fur-bearing, egg-laying mammal — must be susceptible; diseases stemming from the various categories to which the temperamental little animal belongs. He must out-Ferris Ferris himself on his knowledge of the pulmonary function of that elongated wind tunnel, the giraffe, and be prepared to treat the same patient's cervical arthritis, by helicopter if necessary, or to esophagoscope him if the occasion should arise.

Good authority⁵ exists for the occurrence of anthrax among the lions in the London Zoo, and pityriasis rosea has been reported in pigs, both being amenable to suitable treatment. The seven-year itch in an armadillo would admittedly present a challenge to any physician's training and intelli-

gence if he were foolhardy enough to accept the case. On the whole, most of us will be content to leave the less orthodox facets of veterinary medicine to the veterinarians and to Paul Dudley White, who once descended into the thoracic cavity of Molly, the deceased elephant of Franklin Park, to obtain her heart, and who is justly famous for the flings he has taken at passing whales with his electrocardiographic harpoons.

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Ralph T. Esterquest
Librarian, Harvard Medical Library

ONE of our best-known architects was expounding to me the other day on the importance of the fresh approach in designing a new building. "When our firm set to work to develop plans for a new jet air terminal," he said, "we approached the problem as though none of us had ever seen an air terminal." Only by wiping pictures of airports out of his memory, he insisted, could a designer properly translate needs into pure and uninhibited design solutions.

Those of us who are planning improved library services for the Medical School are hardly prepared to embrace this architect's formula in its entirety, since we know that many services, methods and space arrangements in our better libraries are worth emulating. At the same time, we have all felt sure that we did not want merely to create at Harvard Medical School a copy of someone else's good library. The Harvard Medical Library intends to be a happy blend of the tried and the untried. At the same time, its innovations will be based quite solidly on existing needs.

The time has come to report our ideas and our plans to the graduates and other friends of the Harvard Medical School, and to present a rounded account of the library development program as it is now evolving. The first announcement of plans for the building of the new Francis A. Countway Library of Medicine for the Harvard Medical Center appeared in a short item in last quarter's *Bulletin*. Now, we are able to say that we foresee ground-breaking around December, 1961, and, allowing for construction, building occupancy around May, 1963. We are all determined to take whatever time is necessary for the perfect design to evolve, and the schedule therefore allows eighteen months for drawing plans.

Because it has been the heart of our policy to take as much time as necessary before making decisions, it is

only now — two years after assuming the Harvard Medical School librarianship — that I begin to feel ready to place before *Bulletin* readers an outline of our plans.

For simplicity, I have divided the total library plan into its three principal parts:

- Book and journal resources
- Site and building design
- Reader services

and I shall describe each separately.

The heart and the substance of a library are the volumes of books and journals which constitute its collection. The collecting policy for the new library at Harvard Medical School has to have both comprehensive breadth — covering all appropriate subject areas — and it must also have depth and richness in research materials and, in fact, be exhaustive in certain specialties.

Emphasis will naturally be on the basic sciences and on the areas of clinical medicine and surgery. But within the scope will be certain areas of psychology; much of organic and inorganic chemistry, biology, and anthropology; demographic and sanitation subjects related to public health; sociology as it applies to health; mathematical statistics; and economics.

The breadth of the collection is determined by the interests of the members of the faculty and of the research laboratories of the larger Harvard medical community. For example, important research activity is being done in biophysics, in the largely unknown area of trace metals. Basic to this research are books and journals in physics, items not traditionally found in a medical library. Although the new Harvard Library will not have on its shelves a complete physics library, there definitely will be enough of the basic materials to contribute significantly to the work of biophysics pioneers. This field seems par-

ticularly pertinent, as an example, because of its growing importance, although the same might be said also of psychopharmacology and of ultrastructure research.

Another important feature of the plan is to have all of this comprehensive collection within the central library building and to offer long hours of service, seven days a week, and with appropriate reference services. There will not be subject gaps, with significant materials of anatomy or biochemistry off in branch libraries, accessible only during certain work day hours. The user of the Harvard Medical Library — and the future promises that he will number in the thousands — must find in one place, the full array of the literature, conveniently at hand, without being annoyed by gaps and without having to run hither and yon to locate his list of citations.

This is not to say that there might not still be an anatomy library or a dental library. Such libraries will probably exist, but they will exist to serve the convenience of those who work nearby, and their books and journals will almost entirely duplicate materials in the central library.

So much for the comprehensive scope of the future Harvard Medical Library. A word now about Depth:

In a community such as the Harvard Medical Center, where medical discoveries of the utmost significance are made, it is not enough that the books and journals in the library be the common, English-language materials. Significant foreign journals must be at hand. Monographs and research reports from around the world are also the materials of a first-class medical library. Yet, no library can have everything, and the facts of life impose limits to what can realistically be collected, organized, and serviced. This is where a variety of value judgments must be made, guided by the general principle that the Harvard Library must endeavor to satisfy something approaching ninety-five per cent of the requests made upon it. It is of course difficult to estimate the percentage of reader requests that are "satisfied," but, as a general rule, at the upper ranges, each additional ten per cent requires a much larger increase in the collection than the preceding ten per cent. The difference between being able to satisfy ninety and ninety-five per cent might well mean doubling the collection. And doubling it again might result only in pushing the proportion of satisfied requests up to ninety-seven per cent.

An important aspect of these plans is the writing of the Library's Statement of Collecting Scope, which defines the limits of the collecting program and indicates for each of the subject areas the depth to which collecting is to be attempted. This Statement is now evolving under the direction of Mr. Harold Bloomquist, who joined the Library in September, 1958, as Assistant Librarian for Resources and Acquisitions.

Whereas, in most subject fields the collection will have *reasonable* depth, in certain fields it will go further —

it will try to be exhaustive. Such a field is psychiatry, or, more broadly conceived, "psychobiology." The extent of interest in and research in this specialty in Boston seems to justify special library emphasis on its literature, particularly when it is known that there are no other libraries in the country where books in this field are now collected exhaustively. By having the Nation's number-one psychiatry collection, for example, the Harvard Library will emerge as a national resource and a library of eminence.

This is an ambitious collecting program, to be sure. It looks forward to a collection in 1965, or soon thereafter, of 750,000 volumes. This means that the library has a long way to go, proceeding from its present modest 150,000 volumes. It anticipates 3,000 current periodical subscriptions, instead of the present 1,200. One might properly ask how this is to be accomplished.

In the first place, the budget of the library has been substantially increased; so a start has already been made. A year ago, the plan was for a long-term program of resource-building, but it appears now that much of the total program can be accomplished in a relatively short time. This is due to a most happy turn of events, namely, the joint decision of the Trustees of the Boston Medical Library and the officers of Harvard to put their two libraries together in the Harvard building, and to operate them as a single collaborative library service. This historic decision is a separate story in itself, and one that might well be reported in full in the pages of the *Alumni Bulletin*, but for our present purpose, the point that needs to be made is that the collaborative venture will bring into the new library building the 300,000 volumes of books and journals which now comprise the resources of the Boston Medical Library. Thus, the library which is the principal library of the Harvard medical community will be able to build its ultimate collection from the vastly higher plateau of the combined collections (roughly 450,000 volumes) instead of from the level of 150,000 volumes which exists in the Harvard Medical Library alone.

Lest anyone misunderstand the basis or the spirit of the combining of the two libraries, I hasten to point out that the terms are based upon valid *quid-pro-quo* considerations. To say that Harvard "gains access" to an enlarged and enriched collection is not to ignore the fact that the clientele of the Boston Medical Library — i.e., the larger medical community — reaps enormous benefits also through its access to an outstanding collection and topflight staff, in a new, functional building.

By starting at the higher level, the library ought to be able to reach its collecting goals at least five years sooner and certainly at much less cost than would be the case if Harvard were to tackle the job alone.

The site and building design for the Library are still the big questions. The great book and journal collection — comprehensive in scope, rich in research potentials, second in size only to the National Library of Medicine in Washington, D. C. — must be housed in a modern build-

ing and located for the convenience of its users.

Up to now, the site has not been finally determined, but, as we study the alternatives, we are all agreed on the principles: convenient location, space sufficient to design an efficient and attractive building, and ample parking space. Personally, I place great emphasis on convenience for users, remembering that a high percentage of use is by the man that has only twenty minutes to hurry in and read a journal article, a brief moment in a busy day. For this man especially, the library must be just a step away.

Within the building itself, the journal he needs must be immediately at hand. This is a basic principle of the building design — all of the most used materials readily accessible, easy to find, in a quickly-understood array. The journals will be arranged in simple alphabetical sequence, so that the reader does not need to consult a catalog or locating key, but can proceed from his citation directly to the shelves. Monographs will be catalogued, as in all libraries, and they will be classified on the shelves according to the modern National Library of Medicine scheme.

A large reading room, in the conventional sense, has no place in this library. Instead, chairs and small tables will be scattered informally throughout the areas where the books and journals are to be found. There will be an abundance of individual study carrels, and there will be numerous small conversation rooms, each equipped with a table and four or six chairs, a blackboard, and other features. These will be soundproof so that students and other readers may, if they choose, study together and argue and discuss what they are reading.

The building design will emphasize opportunities for choice, based upon individual tastes and whims. There will be straight chairs, soft chairs, deep chairs. There will be tables for six and tables for one. There will be fluorescent illumination, but there will also be incandescent lighting. There will be color choices and choices as to style of decor.

All the relevant engineering techniques will be called upon to make the Library efficient: air-conditioning, quiet ventilation, appropriate acoustical treatment, modern lighting. Beyond that, extraordinary efforts will be made to create an aesthetically pleasing, indeed, a beautiful setting in which to read, study, and contemplate. Special rooms for dictating and typing will be there, as well as areas devoted to audio-visual aids, but these are not enough. The Harvard Library must be one into which the harried doctor and student may escape for the refreshment that comes from the quiet contemplation of lovely surroundings.

The general appearance of the building will be harmonious with other buildings of the Medical School. This is not to say that the Countway Library will be an imitation of the 1905 buildings, but neither will its exterior design be extreme. We are all intent on avoiding the design pitfalls of untried experimentation in a building

that is to be an intimate part of the landscape for generations to come.

It is the princely gift of three and one-half million dollars of Miss Sanda Countway that will make this library building a reality. Miss Countway's gift is a reflection of her intelligent interest in the future of the Harvard Medical School and in its declared intention of being a collaborating partner in medical teaching and research in the larger community. The new building will honor Miss Countway's late brother, a former president of the Lever Brothers Company, by carrying as its name, "The Francis A. Countway Library of Medicine."

An architect for the Countway Library will probably be selected before these words are in print, and it is intended that preliminary designs will be drawn during the summer.

Let us consider for a moment the reader services which will be offered. It is intended that the design of the building and the arrangement of materials on the shelves will make it relatively easy for readers to find what they want and to serve themselves. At the same time, a collection of 750,000 volumes is not an easy-to-use tool, and the Library staff will be increased to meet the potential needs of our very active research community. The Countway Library will place extraordinary emphasis on service. The service functions are thought of as being of two kinds: within the walls, and extending beyond the walls. For both types, an outstanding library staff will be required, and it is planned that qualified reference librarians will be able to relieve the research man of many bibliographic tasks: preliminary literature searching, bibliography checking, and even arranging for tailor-made abstracts and translations.

For the man who comes to the Library in person, the "within-the-walls" facilities will include a set of non-circulating first copies of scores of the most-used books and journals so that availability on the shelves will be insured. There will also be a rapid photocopy service and, perhaps as important as any of these, a place to park his car.

For the man conducting research in one of the Associated Teaching Hospitals who finds it inconvenient to visit the Library, there will be a second set of services: rapid, on-demand messenger service, a competent Library assistant on the "Service-to-Hospitals" desk, and service-minded librarians at the hospital end. For this service, there will be circulating second and third copies of the more used books and journals. And for this whole area, there is the promise of electronic communication devices, such as closed-circuit television and facsimile transmission, which the Countway Medical Library awaits with more than ordinary eagerness.

These next three years promise to be an exciting period. All hands are determined to make the most of the opportunity to create a pioneering library service to meet the needs of the Harvard Medical School and the cause of medical science. (End)

Pharmacology

(continued from page 16)

ods of biological assay of parathyroid activity, and rapid progress in purification of the hormone(s) has already resulted.

The last line of work going on in the Department that I will mention is a study of behavioral effects of drugs. Although this endeavor involves the use of whole animals, it is analytical in its aims. A behavioral response which can be easily and unequivocally recorded is selected. The animal is put in a rigidly controlled environment. Sometimes when the animal makes the response, there is a consequence, such as a presentation of food and water. The dependent variable is simply the occurrence of the response in time. Experimental psychologists have used this sort of situation extensively, and have shown that a great part of the important things one wants to know about behavior can be stated in terms of probability of occurrence of various bits of behavior.

It seems very likely that a great part of the effects of drugs on behavior can be expressed with both generality and coherence in terms of changes in probabilities, consequent upon the action of the drug. It is the hope of this group that through approaches of this kind, a new and high level of rigor will be introduced into a subject notorious for its vagueness and lack of objectivity. In the meantime, several dozens of animals — pigeons, rats, cats and monkeys — live under the control of several hundreds of relays, tubes and transistors. Even monkeys addicted to morphine have their drug grudgingly given them by a machine. All the best (and some of the worst)

things in life depend on the paths taken by a few amperes at 28 volts.

This very incomplete account of the activities of the department has emphasized its great diversity of special interest. This has been the deliberate policy of Dr. Krayner, who has created the Department as it now exists. The value of such diversity in enabling a department to fulfill its proper role in the preclinical sciences would seem obvious. However, many departments of pharmacology in other schools seem to be engaged in "crash programs," with almost all members working on some currently fashionable line. At the moment, biochemistry, particularly the enzymology of intermediary metabolism, is in fashion, and we see medical schools with two and three and even more of the five preclinical departments that are departments of biochemistry in all but name. The spectacular achievements of biochemistry in recent years make the causes of its current prestige obvious. Yet, inevitably, as the law of diminishing returns leads to fewer and more hardly won rewards from the present kind of biochemistry, some other area of medical science will steal the limelight, just as the fickle beam was stolen from the bacteriology of Pasteur, the pathology of Virchow and the physiology of Starling. It is important to remember that progress continues to be made in almost all areas at all times.

This is a plea that departments do not so heavily commit themselves to some particular narrow field of interest that they have no alternative but to molder on in this field, irrespective of developments in other areas.

The Department of Pharmacology at Harvard Medical School is well fitted to play its part among the preclinical sciences. But even this is not sufficient. Pharmacology has another responsibility in the medical school.

The developments of recent years have enormously increased the number and power of the drugs available to physicians for use in therapy. Pharmacology has the responsibility of ensuring the proper clinical instruction for students in pharmacotherapeutics. Unfortunately, it is all too clear that this responsibility has not been as effectively discharged as those earlier mentioned. Education in pharmacotherapeutics has not kept pace with developments in the field. The idea is still widely prevalent that if a diagnosis can be attained, then the most that will be required for optimum therapy will be a quick look into "Physicians Desk Reference" or comparable compendium. Only for a few drugs, notably insulin and digitalis, is proper usage taught, systematically, in detail and at length. Other drugs receive this attention only if they happen to be a particular subject of interest for particular clinicians. Yet attainment of the full potential therapeutic benefit to be obtained from most drugs requires just the same sort of attention to forms and regimen, and understanding of interactions with the patho-physiology of the disease as is generally recognized in the case of digitalis. Medical students should receive systematic teaching in therapeutics in their clinical years. Patients look to physicians as persons professionally trained in therapeutics as well as in diagnosis. Such instruction should be given by clinical pharmacologists, firmly rooted in basic pharmacology, but with clinical sophistication and hospital affiliations. There is, of course, an urgent need for research in this area. Much of what these people should teach is not known. Only when the Department is adequately represented in this area will it be able to feel that it is fully discharging its obligations.



ALUMNI COUNCIL



ALEXANDER MANLIUS BURGESS, '10

Providence, Rhode Island

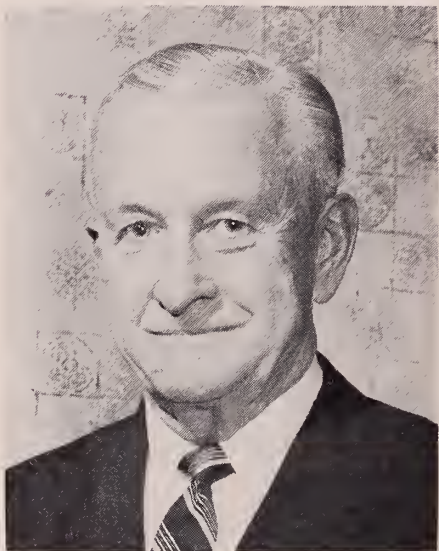
A.B. (Brown) 1906

S.D. (Brown) 1954 (Hon.)

E.D. (Rhode Island College of Education) 1959 (Hon.)

- 1910-1912 Medical Intern, Boston City Hospital
- 1912-1913 Assistant Professor of Pathology, McGill Medical School
- 1914-1949 Practice of Internal Medicine, Providence, R.I.
- 1917-1921 Medical Corps, USNR, Navy Base Hospital #4, Ireland
- 1924-1944 Chairman, Div. of University Health & Assistant Professor of Biology, Brown University
- 1926-1940 Physician-in-Chief, Charles V. Chapin Hospital
- 1944-1950 Professor of Health and Hygiene, Brown University
- 1945-1948 Physician-in-Chief, Rhode Island Hospital
- 1949-1955 Area Section Chief of Medicine, V.A.; Consultant (1955-date)
- 1950-1958 World Medical Association
- 1958-date Program Committee and Medical Advisory Committee, Unitarian Service Committee

President, Providence Medical Association (1938); President, New England Diabetes Association (1948); Alfred Stengel Award (1958); AOA



EUGENE EVERETT O'NEIL, '20

Boston, Massachusetts

A.B. (Harvard) 1916

- 1938-1945 Instructor in Surgery, Harvard Medical School
- 1945-1957 Professor of Clinical Surgery, Boston University School of Medicine
- 1949-1957 Surgeon-in-Chief, Boston City Hospital (Third Surgical Service)
- 1957-date Professor, Emeritus, Boston University School of Medicine; Consulting Surgeon, Boston City Hosp., Choate Memorial, Cambridge City; Visiting Surgeon, Faulkner Hospital, St. Elizabeth's Hospital

Vice-President, Boston Surgical Society (1953); President, Boston Surgical Society (1955); New England Surgical Society; Aesculapian Club



BENJAMIN WATSON CAREY, '32

Westwood, New Jersey

S.B. (Illinois) 1928

- 1932-1933 Intern, Johns Hopkins Hospital
- 1933-1935 Intern and Resident, Boston Children's Hospital
- 1935-1938 Instructor in Bacteriology and in Pediatrics, Harvard Medical School
- 1938-1941 Assistant Professor of Pediatrics, Wayne University
- 1941-1957 Director of Laboratories, Pearl River Research Laboratories, Lederle Laboratories, American Cyanamid Company
- 1957-date Medical Director, Lederle Laboratories

American Academy of Pediatrics; American Public Health Association; Society for Pediatric Research; New York Academy of Sciences; Aesculapian Club; AOA; Alpha Kappa Kappa; Boylston Medical Society

CANDIDATES

EDWARD CARL ROSENOW, JR., '35

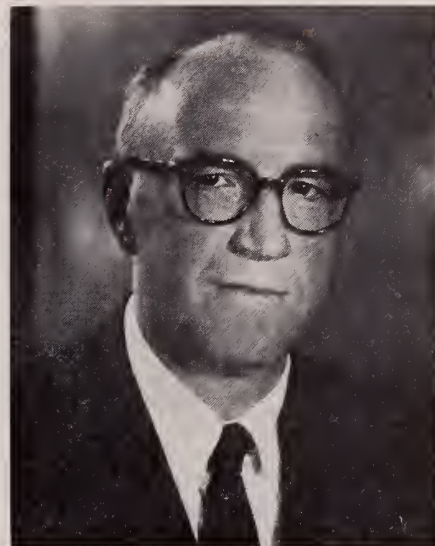
Philadelphia, Pennsylvania

A.B. (Carlton) 1931

S.M. (Minnesota) 1939

- 1935-1936 Intern, Faulkner Hospital
- 1936-1940 Fellow, Internal Medicine, Mayo Foundation
- 1940-1957 Practice of Internal Medicine, Pasadena, Calif.
- 1940-1959 Clinical Professor of Medicine at U. of Southern California; University of California (L.A.); Medical College of Evangelists
- 1949-1959 Chairman, Comm. on Postgraduate Activities, California Med. Assn.
- 1954-1959 Editor-in-Chief, *Audio Digest*, California Med. Assn.
- 1957-1959 Executor Director, Los Angeles County Medical Assn.
- 1960- Executive Dir., American College of Physicians

American Heart Association; American Board of Internal Medicine; Past President of Los Angeles Society of Internal Medicine, Heart Association and County Medical Association; Aesculapian Club, Nu Sigma Nu



HOWARD ULFELDER, '36

Winchester, Massachusetts

A.B. (Harvard) 1932

- 1936-1939 Surgical Intern, Massachusetts General Hospital
- 1939-1941 Surgical Resident, M.G.H.
- 1940-1949 Department of Surgery, H. M. S.
- 1942-1945 United States Army Medical Corps, Chief of Surgical Service, 55th General Hospital
- 1949-1953 Clinical Associate in Gynecology, H. M. S.
- 1953-1955 Assistant Clinical Professor of Gynecology, H. M. S.
- 1955-date Clinical Professor of Gynecology, H. M. S.; Chief of Staff, Vincent Memorial Hospital; Chief, Gynecology Service, M. G. H.; Senior Surgeon, Pondville Hospital

New England Obstetrical and Gynecological Society; New England Surgical Society; Halsted Society; Society of University Surgeons; Eastern Surgical Society; American Association for the Advancement of Science; American Surgical Association



CALVIN HASTINGS PLIMPTON, '43A

Riverdale, New York

A.B. (Amherst) 1939

A.M. (Harvard) 1947

S.D. (Columbia) 1951

- 1943-1944 Medical Intern, Presbyterian Hospital, New York
- 1944-1946 Military Service, U.S. Army
- 1947-1954 Medical Service, Presbyterian Hospital, New York
- 1949-1957 Medical Department, Columbia University
- 1954-date Assistant Attending Physician, Presbyterian Hospital
- 1957-1959 Professor of Medicine and Chairman of the Department, Associate Dean of Faculty of Medicine at American University of Beirut, Lebanon; Chief of Staff, American University Hospital, Beirut.
- 1959-date Assistant Professor of Clinical Medicine and Assistant Dean, Columbia (P & S)
- 1960- President, Amherst College, Amherst, Massachusetts

Certificate of Merit from United States Army (1958); Order of Cedars (Lebanese Government); Harvey Society; New York Diabetes Association; Gerontological Society; Aesculapian Club; AOA; Boylston Medical Society; Nu Sigma Nu





STEW



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INTERNSHIPS



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COO



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1960

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Photos by David Lawlor

INTERNSHIPS, CLASS OF 1960

Photographs by David Lawlor

Unless otherwise noted all internships start July 1, 1960 for one year.

<i>Name</i>	<i>Hospital (and location)</i>	<i>Service</i>
Alpers, David H.	Massachusetts General, Boston	Medicine
Axelrod, David	Strong Memorial, Rochester, N. Y.	Medicine
Azadian, Harry Y.	Univ. of California, San Francisco, Calif.	Surgery
Bach, Fritz H.	Bellevue (3d Div.-NYU), New York, N. Y.	Medicine
Bank, Arthur	Boston City (Harvard Service), Boston	Medicine
Barr, Joseph S., Jr.	Peter Bent Brigham, Boston	Surgery
Barrett, John S.	Univ. of Pennsylvania, Philadelphia, Pa.	Rotating
Barrett, Peter V. D.	Massachusetts General, Boston	Medicine
Barrie, Joseph R.	Massachusetts General, Boston	Surgery
Baughman, Richard D.	Mary Hitchcock Memorial, Hanover, N. H.	Rotating
Berne, Joel E.	North Carolina Memorial, Chapel Hill, N. C.	Pediatrics
Bernier, George M., Jr.	University Hospitals, Cleveland, Ohio	Medicine
Biehl, Robert F.	U. S. Naval Hospital, Bethesda, Md.	Rotating
Binder, Sheldon C.	Massachusetts General, Boston	Surgery
Britton, Melvin C., Jr.	Colorado General, Denver, Colo.	Rotating
Buchanan, John L.	Presbyterian, New York, N. Y.	Medicine
Budd, Matthew A.	University Hospitals, Cleveland, Ohio	Medicine
Bulger, Roger J.	University Hospital, Seattle, Wash.	Mixed
Bull, John C., Jr.	Univ. of Oregon Med. Sch., Portland, Oregon	Rotating
Burrington, John D.	Massachusetts General, Boston	Surgery
Burtis, Richard T.	University Hospitals, Cleveland, Ohio	Medicine
Chacko, C. John	Royal Victoria, Montreal, Canada	Rotating
Chaffey, Ben T.	Univ. of California, Los Angeles, Calif.	Surgery
Chasin, Richard M.	New England Center, Boston	Medicine
Cloutier, Mark D.	Mary Hitchcock Memorial, Hanover, N. H.	Rotating
Cohen, Jordan J.	Boston City (Harvard Service), Boston	Medicine
Cohen, Stephen N.	Boston City (Harvard Service), Boston	Medicine
Colman, Robert W.	Boston City (Harvard Service), Boston	Medicine
Cox, James F. W.	Newton-Wellesley, Newton Lower Falls	Rotating
Davis, S. Edward, 3d	Med. College of Virginia, Richmond, Va.	Surgery
Dobrow, Robert J.	Boston City (Harvard Service), Boston	Medicine
Donovan, J. Arnold, Jr.	Strong Memorial, Rochester, N. Y.	Surgery
Eaton, John M.	Univ. of Utah Affiliated, Salt Lake City, Utah	Medicine
Ellis, Charles A., Jr.	New England Center, Boston	Medicine
Fishman, Lawrence M.	Peter Bent Brigham, Boston	Medicine
Forcier, Robert J.	Mary Hitchcock Memorial, Hanover, N. H.	Rotating
Frank, Michael M.	Boston City (Harvard Service), Boston	Medicine
Frech, Robert S.	Baltimore City, Baltimore, Md.	Surgery
Frey, Walter W.	Jackson Memorial, Miami, Fla.	Medicine
Gallagher, William F., Jr.	Bellevue (2d Div.-Cornell), New York, N. Y.	Medicine
Gelch, Melvyn M.	Bellevue (1st Div.-Columbia), New York, N. Y.	Surgery
Gittes, Ruben F.	Massachusetts General, Boston	Surgery
Goldstein, David A.	Harvard Medical School, Boston	Biophysics
Green, William T., Jr.	Peter Bent Brigham, Boston	Surgery
Greer, Robert B., 3d	University Hospital, Ann Arbor, Mich.	Rotating
Halverstadt, Donald B.	Massachusetts General, Boston	Surgery
Hansen, Thomas W.	Palo Alto-Stanford Hosp. Ctr., Palo Alto, Calif.	Medicine
Hare, Hugh G.	Univ. of Utah Affiliated, Salt Lake City, Utah	Medicine
Hechtman, Herbert B.	Presbyterian, New York, N. Y.	Surgery
Heller, Naomi H. B.	Beth Israel, Boston	Medicine
Hoffman, Allan A.	University Hospitals, Cleveland, Ohio	Surgery
Holden, Robert A.	North Carolina Memorial, Chapel Hill, N. C.	Mixed
Holm, J. Lorimer	Mary Fletcher, Burlington, Vt.	Rotating
Houle, Roland E.	Henry Ford, Detroit, Mich.	Rotating
Hughes, James R.	Massachusetts General, Boston	Medicine
Hull, Franklin E.	North Carolina Memorial, Chapel Hill, N. C.	Medicine
Iavazzo, Ronald E. S.	Univ. of Minnesota, Minneapolis, Minn.	Surgery
James, Douglas H.	University Hospitals, Cleveland, Ohio	Medicine
Jamison, Rex L.	Massachusetts General, Boston	Medicine

Jeffery, Russell L.	University Hospital, Ann Arbor, Mich.	Rotating
Jensen, Eric H.	Univ. of Utah Affiliated, Salt Lake City, Utah	Rotating
Kamper, David G.	Bellevue (2d Div.-Cornell), New York, N. Y.	Medicine
Kaplan, Marshall M.	Presbyterian, New York, N. Y.	Medicine
Kastin, Abba J.	Vanderbilt University, Nashville, Tenn.	Medicine
Kelley, Richard R.	Univ. of California, San Francisco, Calif.	Medicine
Kingsbury, Richard A.	Univ. of Oregon Med. Sch., Portland, Oregon	Rotating
Kleiger, Robert E.	Peter Bent Brigham, Boston	Medicine
Kurland, M. David	Univ. of Utah Affiliated, Salt Lake City, Utah	Rotating
La Monte, Charles S.	Bellevue (2d Div.-Cornell), New York, N. Y.	Medicine
Larson, Alvin L.	Martin Army Hospital, Fort Benning, Ga.	Rotating
Leder, Philip	Univ. of Minnesota, Minneapolis, Minn.	Medicine
Levin, Albert B.	Boston City (Harvard Service), Boston	Medicine
Lindseth, Richard E.	State Univ. of New York Upstate Med. Center, Syracuse, N. Y.	Surgery
Luhrs, Caro E.	North Carolina Memorial, Chapel Hill, N. C.	Mixed
McCarthy, Laurence J.	Boston City (Tufts Service), Boston	Medicine
McClintock, Richard P., Jr.	North Carolina Memorial, Chapel Hill, N. C.	Medicine
Martin, Robert G.	Graduate School of Arts & Sciences, Harvard Univ.	Biochemistry
Morrison, Robert W.	Strong Memorial, Rochester, N. Y.	Surgery
Mulder, George A.	Roosevelt, New York, N. Y.	Mixed
Murphy, Paul J.	Boston City (Tufts Service), Boston	Surgery
Myler, Richard K.	San Francisco Hosp., San Francisco, Calif.	Rotating
Neff, John M.	Johns Hopkins, Baltimore, Md.	Pediatrics
Neistadt, Arnold	Strong Memorial, Rochester, N. Y.	Surgery
Nesburn, Anthony B.	Boston City (Harvard Service), Boston	Medicine
Nesburn, Brigid P. G.	Massachusetts General, Boston	Pediatrics
Norden, Carl W.	Peter Bent Brigham, Boston	Medicine
Ottinger, Leslie W.	Massachusetts General, Boston	Surgery
Perkins, John C.	Univ. of Illinois Research & Educational, Chicago, Ill.	Rotating
Perlroth, Mark G.	Peter Bent Brigham, Boston	Medicine
Philipps, Ervin	Mary Hitchcock Memorial, Hanover, N. H.	Rotating
Plott, Dwight M.	Univ. of Utah Affiliated, Salt Lake City, Utah	Medicine
Polk, Hiram C., Jr.	Barnes, St. Louis, Mo.	Surgery
Pollen, Daniel A.	Cleveland Metropolitan General, Cleveland, Ohio	Surgery
Powers, James A.	Barnes, St. Louis, Mo.	Medicine
Radin, Eric L.	Univ. of California, Los Angeles, Calif.	Surgery
Raslavicius, Polius A.	Univ. of Pennsylvania, Philadelphia, Pa.	Rotating
Replogle, Robert L.	Univ. of Minnesota, Minneapolis, Minn.	Surgery
Reynolds, Stephen L.	Univ. of Illinois Research & Educational, Chicago, Ill.	Rotating
Rickles, William H., Jr.	University Hospital, Ann Arbor, Mich.	Rotating
Rogers, Richard C.	Univ. of Oregon Med. Sch., Portland, Oregon	Rotating
Roth, Lawrence M.	Univ. of Illinois Research & Educational, Chicago, Ill.	Rotating
Ruef, John S.	Mary Imogene Bassett, Cooperstown, N. Y.	Rotating
Russell, Warren M.	Kaiser Foundation, San Francisco, Calif.	Rotating
Sack, Lawrence C.	Mary Hitchcock Memorial, Hanover, N. H.	Rotating
Salzer, John M.	Boston City (Harvard Service), Boston	Medicine
Sanger, Sirgay	Mount Sinai, New York, N. Y.	Rotating
Schaller, Jane Green	Children's Orthopedic, Seattle, Wash.	Pediatrics
Schaller, Robert T., Jr.	University Hospital, Seattle, Wash.	Mixed
Schoop, H. Dietrich	Internship postponed	
Schwartz, Gordon F.	New York Hospital, New York, N. Y.	Surgery
Segel, David P.	Univ. of Utah Affiliated, Salt Lake City, Utah	Medicine
Shaka, George J.	Boston City (Harvard Service), Boston	Surgery
Shirley, Robert L.	Univ. of California, San Francisco, Calif.	Surgery
Shohet, Stephen B.	Beth Israel, Boston	Medicine
Sigler, Stephen J.	Mount Sinai, New York, N. Y.	Rotating
Silverman, Carl G.	Boston City (Harvard Service), Boston	Medicine
Smith, Raphael F., 3d	Massachusetts General, Boston	Medicine
Stason, William B.	Massachusetts General, Boston	Medicine
Steigbigel, Neal H.	Boston City (Harvard Service), Boston	Medicine
Stenberg, Clayton C.	Mary Hitchcock Memorial, Hanover, N. H.	Rotating
Tankersley, James C.	Univ. of Utah Affiliated, Salt Lake City, Utah	Rotating
Tannenbaum, Maurice	Bronx Municipal, New York, N. Y.	Medicine
Tauraso, Nicola M.	Internship postponed	
Tevis, Duane K.	University Hospital, Ann Arbor, Michigan	Rotating
Thompson, Edward I. B.	Presbyterian, New York, N. Y.	Medicine
Thorne, Melvyn C.	Pennsylvania Hospital, Philadelphia, Pa.	Rotating

Thornton, Richard R.
 Tingelstad, Jon B.
 Trusler, Harold M.
 Valentine, Fred T.
 Veit, Diana J.
 Vogel, Robert M.
 Ward, Gene A.
 Warnock, Martha Lawall
 Watt, Thomas L.
 Watts, Hugh G.
 Weltner, John S.
 Wirschafter, Jonathan D.
 Woodruff, Robert A., Jr.
 Wurtman, Richard J.
 Zaslow, Stephen L.

State Univ. of Iowa, Iowa City, Iowa
 Children's Medical Center, Boston
 Indiana Univ. Med. Center, Indianapolis, Ind.
 Boston City (Harvard Service), Boston
 Cleveland Metropolitan General, Cleveland, Ohio
 Grace-New Haven Community, New Haven, Conn.
 Grace-New Haven Community, New Haven, Conn.
 University Hospital, Seattle, Wash.
 Mary Hitchcock Memorial, Hanover, N. H.
 Royal Victoria, Montreal, Canada
 University Hospital, Ann Arbor, Mich.
 Philadelphia General, Philadelphia, Pa.
 Mary Imogene Bassett, Cooperstown, N. Y.
 Massachusetts General, Boston
 Boston City (Harvard Service), Boston

Rotating
 Pediatrics
 Surgery
 Medicine
 Surgery
 Medicine
 Surgery
 Pathology
 Rotating
 Rotating
 Rotating
 Rotating
 Rotating
 Medicine
 Medicine

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reactivates the geriatric patient

oral METRAZOL
reactivates the convalescent

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dosage

for the geriatric patient - 2 tablets or teaspoonfuls, three times daily.
 for the convalescent and the fatigued - 1 or 2 tablets or teaspoonfuls, three times daily.

availability

METRAZOL Tablets and Liquidum
 Each tablet, 100 mg. METRAZOL. Each teaspoonful, 100 mg. METRAZOL and 1 mg. thiamine.
 — for those patients who need additional vitamins —
Vita-METRAZOL Elixir and Tablets
 Each teaspoonful, 100 mg. METRAZOL, 10 mg. niacinamide, 1 mg. each of thiamine, riboflavin, pyridoxine, and 2 mg. d-panthenol. Each tablet, in addition, 25 mg. vitamin C.

METRAZOL® brand of pentylenetetrazol, E. Bilhuber, Inc.

packaging

Tablets in 100's and 500's. Liquid (wine-like flavored 15 per cent alcoholic solution) in pints.

KNOLL PHARMACEUTICAL COMPANY
 (formerly Bilhuber-Knoll Corp.)
 Orange, New Jersey

The Dying Patient *(continued from page 25)*

And bade me creep past.
No! Let me taste the whole of it, fore like my
peers
The heroes of old,
Bear the brunt, in a minute pay glad life's
arrears
Of pain, darkness, and cold."

At the turning of the century, the British produced another incredible example of the noble death, which came to light when the following report from Captain Robert Scott of the doomed South Pole expedition was discovered several years later by Admiral Byrd.

"Friday, March 16 . . . Tragedy all along the line. At lunch the day before yesterday, poor Titus Oates said he couldn't go on; he proposed we should leave him in his sleeping bag. That we could not do, and induced him to come on, on the afternoon march. In spite of its awful nature for him, he struggled on and we made a few miles. At night he was worse and we knew the end had come.

Should this be found I want these facts recorded. Oates's last thoughts were of his Mother, but immediately before he took pride in thinking that his regiment would be pleased with the bold way in which he met his death. We can testify to his bravery. He has borne intense suffering for weeks without complaint, and to the very last was able and willing to discuss outside subjects. He did not — would not — give up hope to the very end. He was a brave soul. This was the end. He slept through the night before last, hoping not to wake; but he woke in the morning — yesterday. It was blowing a blizzard. He said, "I am just going outside and may be some time." He went out into the blizzard and we have not seen him since. . . . We knew that poor Oates was walking to his death, but though we tried to dissuade him, we knew it was the act of a brave man and an English gentleman."

America has had its heroes too, most recently of course in the two great wars. It is striking though how strange and foreign to our mid-century ears are the words of the idealistic patriot, whose naive conception of war representing the good side versus the bad is no longer a part of the "advanced" American mind. As an example, note this portion of a letter written to his wife from an American officer in a trench in France during the First World War:

"I am writing you a few lines to say that I am assigned with my company to two French companies to defend an important position (hill) against the expected German offensive. My company will be in the first position to resist the tremendous con-

centration against us, and I do not believe there is a chance of any of us surviving the first rush. I am proud to be trusted with such a post of honor and have the greatest confidence in my own men to do their duty to the end. . . . My company is expected to protect the right flank of the position and to counterattack at sight of the first Boche. In war some units have to be sacrificed for the safety of the rest, and this post has fallen to us and will be executed gladly as one contribution to the final victory . . . I want you in case I am killed to be brave and remember that one could not have wished a better way to die than for a righteous cause and one's country."

It might be well for us to consider briefly some thought concerning immortality expressed by various spokesmen of the modern mind. Mark Twain, who certainly is not well known for his religious orthodoxy, had this to say of death:

". . . the dignity of death — the only earthly dignity that is not artificial — the only safe one. The others are traps that beguile to humiliation. Death — the only immortal who treats us all alike, whose pity and whose peace and whose refuge are for all — the soiled and the pure — the rich and the poor — the loved and the unloved."

and had this to say of life after death:

"I have never yet seen what to me seemed an atom of proof that there is a future life. And yet — I am strongly inclined to expect one."

William James introduces another idea, of which physicians should be supremely conscious, and he treats the idea of immortality as a physician probably should, whether or not he is a believer. James writes:

"Immortality is one of the great spiritual needs of man . . . I have to confess that my own personal feeling . . . has never been of the keenest order, and that, among the problems that give my mind solicitude, this one does not take the foremost place. Yet there are individuals with a real passion for the matter, men and women for whom a life hereafter is a pungent craving . . . and in whom keenness of interest has bred an insight into the relations of the subject that no one less penetrated with the mystery of it can attain. Some of these persons are known to me . . . they do not speak as the scribes, but as having direct authority."

Leo Tolstoi becomes with his own words a particular example of what James is talking about:

The Dying Patient (continued)

"It is not arguments that convince one of the necessity of a future life . . . Life and death — they are what convince a man. The sort of thing that convinces a man is when he sees a being dear to him, with whose life he has been intimately bound up, . . . and suddenly this being suffers, is tortured, and ceases to be. Why? It cannot be that there is no answer. I believe that there is one . . . One must believe that we live not merely now on this patch of earth, but that we have lived and shall live eternally there in that universe. . . ."

It is always interesting to hear the personal views concerning afterlife of great men who are not caught up in the stream of one of the more orthodox theologies. An example is William Osler:

"On the question before us (immortality) wide and far your hearts will range from those early days when matins and evensong, evensong and matins sang the larger hope of humanity into your souls . . . You will wander through all phases, to come at last, I trust, to the opinion of Cicero, who had rather be mistaken with Plato than be in the right with those who deny altogether the life after death; and this is my own *confessio fidei*."

Benjamin Franklin had the following words inscribed on his tombstone:

"The body of Benjamin Franklin, printer (like the cover of an old book, its contents torn out, and stripped of its lettering and gilding), lies here food for worms, but the work itself shall not be lost, for it will (as he believed) appear once more in a new and more beautiful edition, corrected and amended by the author."

Although, in modern America, there are some people who share their philosophy with the classical pagans of old — though there are some truly orthodox Christians and Jews who live in a true expectation of eternal life — though there may be some romantics and even some heroes among us — we as young medical students are part of a generation more sophisticated, more cynical than those who have gone before us. We are part of a culture that has seen the waning of its spiritual guiding lights and also much fulfillment of material goals, but we have not yet passed out of the doldrums to the point where there is once again a unifying cultural concept giving our lives direction and our deaths meaning. We have been shorn of our traditional religion; we can no longer honestly abide the idea, introduced in the 18th century by the spokesmen of the Age of the Enlighten-

ment, of an earthly paradise; it is no longer "valid" to be a patriot or an America-firster. Instead of the radicals, the political and social crusaders of the 18th, 19th, and early 20th centuries, we find ourselves in a position embarrassingly similar to the 1959 N. Y. Yankees, fat, overpaid, and without a cause. We are the conservatives, the standard-bearers of the status quo, and we look fearfully back over our political shoulders at the hungry, base-stealing Chicago White Sox who in this case make their home cities in Moscow and Peking, and who, we sense not without some uneasiness, might die for their cause. If all this that the social scientists tell us about ourselves is true (or maybe they are fear-mongers, depending on how far to the right or left you are or on how recently you went to college) it must inevitably have its bearing on individual responses to sickness and death in an ever-increasing fashion in the years to come.

It seems absurd, however, to say that we have no vital force behind us. We do have an ideal, one which defies fact, one which commands us to honestly face up to and adjust to reality. And there must be a thanatology, or a philosophy of dying, which mirrors this commandment, a thanatology which is really the most appropriate to our age. At least, this is the view taken by K. R. Eissler in a bold and interesting attempt to carve out the beginnings of such a construct. Although he mixes science, philosophy, psychiatry, aesthetics, and pure conjecture with great verve, he admits some of this and at least is meeting the problem head-on. Other writers, perhaps most serious literary people, are grappling with the same problem in one way or another. When Eissler describes what the new orthothanasia (the right view of dying) will be, he says:

"Orthothanasia, though it has to destroy the comforting illusion of eternal life, restores death to a place which is free of evil and good. Death becomes a natural event which, though it cannot be integrated by the unconscious part of the personality, can be integrated by reason. . . . Like most sciences, orthothanasia will ease man's life in some respects and make it more difficult in others. Its primary purpose cannot be to provide consolation but only to assist in recognizing reality. Reality is always — and in this instance particularly — complicated, serious, and heavy to bear."

Although this orthothanasia may seem hard for some of us to understand or appreciate, we ought to work at it, because it seems such an idea is shared by many others. In his first novel, *The Stranger*, Albert Camus, the recently killed spokesman for man and his fate, wrote largely about death. His main theme develops until in the final scene it is apparent that man and nature and death come to some sort of rapprochement, at least in the mind of the major character. This character, who seems to represent the "little men" of the world, faces

life "realistically," begins a love affair the day after his mother's funeral, which for him meant only an opportunity to get a few days off from work. Later, he commits a rather pointless murder, is tried for it, and is sentenced to death. The following excerpts are from the concluding pages of the book and represent an interesting contrast to the death scene of Sir Walter Raleigh as previously described. In these excerpts, the narrator is the main character and the visitor to his cell is a priest who seeks to bring him back to God.

"Why," he asked, "don't you let me come to see you?"

I explained that I didn't believe in God.

"Are you really so sure of that?"

I said I saw no point in troubling my head about the matter; whether I believed or didn't was, to my mind, a question of so little importance. . . .

He looked away and, without altering his posture, asked if it was because I felt utterly desperate that I spoke like this. I explained that it wasn't despair I felt, but fear — which was natural enough.

"In that case," he said firmly, "God can help you. All the men I've seen in your position turned to Him in their time of trouble."

Obviously, I replied, they were at liberty to do so, if they felt like it. I, however, didn't want to be helped, and I hadn't time to work up interest for something that didn't interest me. . . .

And his voice was quite steady when he said, "Have you no hope at all? Do you really think that when you die you die outright, and nothing remains?"

I said, "Yes." . . .

(Finally the priest loses his control.) . . . "No! No! I refuse to believe it. I'm sure you've often wished there was an afterlife."

Of course I had, I told him. Everybody has that wish at times. But that had no more importance than wishing to be rich, or to swim very fast, or to have a better-shaped mouth. It was in the same order of things. . . .

At this point the narrator loses his temper and throws the priest out of his cell; he falls asleep, only to be awakened in the middle of the night to discover in visionary fashion his answer to the problem of death. These are the last lines of the novel:

"And I too felt ready to start life all over again. It was as if that great rush of anger had washed me clean, emptied me of hope, and gazing up at the dark sky spangled with its signs and stars, for the first time, the first, I laid my heart open to the benign indifference of the universe. To feel it so

like myself, indeed, so brotherly, made me realize that I'd been happy, and that I was happy still. For all to be accomplished, for me to feel less lonely, all that remained to hope was that on the day of my execution there should be a huge crowd of spectators and that they should greet me with howls of execration."

In developing his idea, Eissler draws heavily upon the concept of the death instinct as Freud first formulated it and presents the new "modern" death as occurring when all libidinal energy is utilized, and there is absolutely no possibility of the person experiencing further pain or pleasure, love or hate. Whether we agree with Eissler's conjectures or not, we must agree that he makes some interesting points and emphasizes those which others have made. For example, he suggests that the German poet Rainer Maria Rilke be made the poet-laureate of the orthothanatologists. Two passages from Rilke's pen are worth quoting in this regard. The first is prose:

"This excellent hotel (writes Rilke of Paris' oldest hospital) is very ancient. Even in King Clovis' time people died in it in a number of beds. Now they are dying there in 559 beds. Factory-like of course. Where production is so enormous an individual death is not so nicely carried out; but then that doesn't matter. It is quantity that counts. Who cares today for a finely-finished death? No one. Even the rich, who could after all afford this luxury of dying in full detail, are beginning to be careless and indifferent, the wish to have a death of one's own is growing even rarer . . . One dies just as it comes, one dies the death that belongs to the disease one has (for since one has come to know all diseases, one knows, too, that the different lethal terminations belong to the diseases and not to the people, and the sick person has, so to speak, nothing to do)."

The second passage from Rilke is a poem which represents his answer to the ignominious type of death one experiences in the large Paris hospital:

Oh Lord give everyone his own death,
the dying which proceeds from that life
in which he had love, meaning and anguish.
For we are nothing but the shell and the leaf.
The great Death which everyone has in himself,
this is the fruit around which everything revolves.

* * *

For this makes dying strange and difficult
that it is not our death; it is one which
takes us at last only because we have not matured
our own.

Therefore a storm rages in order to brush us all away.

The Dying Patient (continued)

Let us conclude with Eissler by stating his position, that it is up to the psychiatrists to make a science of dying through careful and repeated psychological study of dying patients, something which has never been attempted. He also emphasizes a very practical point for all of us, and that is that the deathbed is a place where the psychiatrist may be desperately needed and may be of considerable help.

When one decides, however, that he is ready to attack the literature on the practical aspects of caring for the dying patient, one finds that there is morbidly little to attack. The two most outstanding references which everyone should read are rich in practical detail, details which though obviously quite proper and valid, would probably never cross a medical student's mind. The most important reference is a collection of three short lectures by Alfred Worcester, published in 1935, entitled *The Care of the Aged, the Dying, and the Dead*. The second is an article called "Care of the Dying" by Walter Alvarez, *J.A.M.A.*, volume 150, No. 2, September, 1952.

There can be no substitute for reading Dr. Worcester's book, which is aimed at presenting the medical student with the minimum he should know about the care of the dying although it must be remembered that this book was written 25 years ago. The first thing obviously is to be able to recognize the dying man when one sees him, and Worcester prefers Sir Henry Hallford's description of the dying patient to all others:

"The eyes glazed and half-closed, jaw dropped and mouth open, cold and flaccid lip; cold, clammy sweats on head and neck; respirations hurried and shallow or slow and stertorous with rattle; pulse irregular, unequal, weak and immeasurably fast; prostrate on back, arms tossing in disorder, hands waved languidly before the face or grasping through empty air, or fumbling with bedclothes."

As Dr. Worcester himself says,

"These classic descriptions of approaching death should serve in every medical student's memory as pegs upon which to hang such modifications of the picture as his future experience shall furnish. And surely the young physician needs every possible help in deciding when the actual process of dying has begun, for the treatment of the patient must then be radically changed."

A few of the more interesting and perhaps valuable suggestions of a practical nature that Dr. Worcester makes should be mentioned. Once dying has begun, giving nutriment by mouth is useless and may often become the source of the death rattle because it may be aspirated into the trachea. In the case of hypersecretion, atropine may do away with the rattle, which often is as disturbing to the patient as it is to the family. Dr. Worcester builds a very strong case for his contention

that dying patients may be extremely lucid even when they appear quite obtunded and should always be treated with this in mind.

Thirst and dryness of mouth are two of the most potent sources of discomfort in the last hours, and pure water or water and vinegar in meager amounts brings great relief. At the last, a gauze should be placed with one end in ice-water and the other in the patient's mouth.

Dr. Worcester contends that, however cold a patient's skin and extremities are, in the face of a clammy perspiration the patient is most often feeling too hot. He feels that the restlessness of the dying is due to this sensation of excessive heat and that what is needed is not more but less covering. Alcohol sponges and a fan lightly blowing over the body often seem to help a great deal.

Finally, he suggests that it is a great kindness to cater to terminally failing sight and hearing by being sure that there is a strong light in the room and that music is being played. In a way that is foreign to the modern medical student these suggestions and many others imply an obligation to our patients of which most of us have never been made aware.

Aside from these very tangible methods of treating the dying person, both Dr. Worcester and Dr. Alvarez have much to say regarding the more intangible technique of knowing how to implement and direct the course of the relationship between doctor and patient and between doctor and family. It is pointed out that most patients know they are near death and that in many cases, for the doctor to deny the truth is to deny the patient the one disinterested, yet sympathetic friend he has. Very often, the patient, understandably, cannot bring the question into the open with his friends and family, but he may want very much to talk it over with someone, and that someone should most logically be his doctor. Dr. Alvarez tells of an incident in his own practice in which a male patient of his was in a terminal state. Dr. Alvarez, knowing that the man's marriage had been long and happy, confronted both husband and wife simultaneously with the bad news, suggesting that since they had faced so many hardships together through the years, there was no reason why they shouldn't face this together as well. On the other hand, there are occasions when patient and family would both prefer that nothing be said, and that the whole episode be carried off without the word "death" ever crossing anyone's lips, including the doctor's. It is up to the physician to recognize this situation and to keep silent, thus sensing when to play the old American game of denial.

The two articles under discussion leave the reader with a very distinct impression of the role of the physician as these authors visualize it, the role a doctor no doubt often comes to appreciate and understand very quickly

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